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REPORT UPON THE FOUR THOUSAND FIVE HUNDRED AND THIRTY-ONE PATIENTS DISCHARGED FROM CATAWBA SANATORIUM UP TO JANUARY 1, 1922.*

By J. B. NICHOLLS, M. D., Catawba Sanatorium, Va.

Catawba Sanatorium was formally opened on July 30, 1909, with an average capacity of thirty-eight patients for that year. From the opening of the institution up to and including December 31, 1921, four thousand five hundred and thirty-one patients were discharged from the Sanatorium. One hundred and fifty-four patients were admitted more than once, leaving four thousand three hundred and seventy-seven cases to be reported upon.

The following report is based upon these four thousand three hundred and seventy-seven cases; and is for the purpose of showing the after results of sanatorium treatment, or the condition of our discharged patients in the year 1922. After deducting the non-tuberculous and the suspicious cases, our final report is made upon the four thousand two hundred and fifty-seven cases definitely diagnosed as having had pulmonary tuberculosis.

The results given in the statistical tables are taken from replies to letters which we sent to our ex-patients in the early part of 1923, in order to ascertain the condition of these patients in 1922. No letters were sent to patients who had not been away from the Sanatorium for at least one year—hence the report includes only those patients who were discharged prior to January 1, 1922; or up to and including December 31, 1921.

Below is an outline of the plan which we have followed in compiling these statistics:

1. *Explanation of classification of disease for all tables:*
   - A. Non-tuberculous.
   - B. Suspicious.
     - (1) Including a small number who did not remain long enough for examination and diagnosis.
     - (2) Including those who remained for treatment, but upon whom a definite diagnosis could not be made.
   - C. Tuberculous.
     - (1) Minimal, or Incipient.—Slight lesion limited to one or both apieces. No serious tuberculous complications.
     - (2) Moderately Advanced.—A lesion of one or both lungs, more widely distributed than under minimal; the extent of which may vary, according to the severity of the disease, from the equivalent of that classed under minimal, to the equivalent of the volume of an entire lung with no evidence of cavity formation; no serious tuberculous complications.
     - (3) Far Advanced.—A lesion more extensive than under moderately advanced; or definite evidence of cavity formation; or serious tuberculous complications.

NOTE—The above classification of patients is the scheme that is used here, and is in accordance with the classification recommended by the American Sanatorium Association. Since 1920 we have classified our patients according to physical and X-ray findings.

*Read at the fifty-fourth annual meeting of the Medical Society of Virginia in Roanoke, October 16-19, 1923.

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2. *Explanation of the economic condition of patients:*
   - A. Working full time.
   - B. Working part time.
     - (1) Including those who are able to work only part time.
     - (2) Those who are financially able to live by working only part time, but who possibly could work full time.
   - C. Not working.
     - (1) Including those unable to work.
     - (2) Possibly including some who are able to work but who are financially independent.
   - D. Living—Working time not reported.
     - (1) Including some unable to work.
     - (2) Some able to work only part time.
     - (3) Some able to work full time.
   - E. Not located.
     - (1) Including patients who have been well and at work so long that they do not care to be followed up by the Sanatorium.
     - (2) Including a few whose people do not wish us to write to them—such as insanity cases, etc.
     - (3) Including some who are dead; however at the present time we feel that a large percentage of these unlocated patients are still living.
   - F. Dead.
     - (1) Including patients who died in the Sanatorium.
     - (2) Patients who died after leaving.

EXPLANATION OF THE DEFINITELY DIAGNOSED TUBERCULOUS CASES

MINIMAL—(See Table XVI.-A and Chart I.)

The average percentage of the minimal cases living in the year 1922 was 89.90 per cent; leaving a percentage of 10.10 minimal cases dead. I am unable to explain why the percentage of living cases was so much lower for the first three years of the Sanatorium's operation (1909-10-11) than for the following years. The number of patients discharged during that period was small, as the capacity of the Sanatorium was very limited in the beginning; but that does not explain why there should be such a marked difference in the percentages of the first three years from the following years. From 1912 on the percentage of minimal cases living remained about 90 per cent for every year except 1913, when it dropped to 76.84 per cent.

MODERATELY ADVANCED—(See Table XVI.-B Chart II.)

Beginning with the discharges for 1909, we find 100 per cent dead for that year. The percentage for the living gradually rises from zero, in 1909, to 71.19 per cent in 1914; and it then remains in between 70 per cent and 90 per cent for the following years included in the statistical tables. In 1922 the total living for all discharges of the moderately advanced class was 67.08 per cent. As time passes this living percentage will drop; for in addition to the general death rate for that number of people, some of these cases will eventually die of tuberculosis. It will take time to tell more accurately what to expect of the moderately advanced cases, so far as the disease becoming arrested, or so far as their living out what we might call a natural life, is concerned. Certainly the result will not be so good as for the minimal cases, but it will eventually be shown to be much better than the result for the far advanced cases.

FAR ADVANCED—(See Table XVI.-C and Chart III.)

This table shows the percentages of the far advanced cases who were living and those who were dead in 1922. With some exceptions, the far advanced cases are more or less hopeless. In the majority of these cases we are able to do little further than to prolong their lives for a few months or a few years. At the end of the year 1922, only 54.55 per cent of the far advanced cases, who were discharged from the Sanatorium in 1921, were reported as living —a year or a little more after discharge from the Sanatorium.

With the additional beds added to the Sanatorium within the last four years, we

have admitted a greater number of the more advanced cases than in the previous years; and a good number of these cases have had little or no chance for improvement. Practically all far advanced cases are eventually going to die as the result of having had tuberculosis; and the majority of them will probably die within from one to three years after leaving the Sanatorium. However, there will be a small number of advanced cases that will go on for a number of years—some of them to lead useful lives.

Table XVI.-A, B and C and Chart IV. show the minimal, moderately advanced, and far advanced cases combined. Commencing with the discharges for 1910, you will notice that the percentage of living patients gradually rises as the time since discharge from the Sanatorium grows shorter. Also, the greater death rate of the far advanced cases, and even of the moderately advanced cases, over and above the incipient cases, of course, lowers the percentage of the living considerably when we make an average of all classes of cases.

Summary—Total discharges who were definitely diagnosed as having pulmonary tuberculosis—4,257 (omitting non-tuberculous and suspicious cases).

1. Minimal ..... 818 or 19.22%
2. Moderately Advanced....1015 or 23.74%
3. Far Advanced .....2424 or 56.94%

Probably 90 per cent of patients in the minimal stage of the disease, who undergo sanatorium treatment, may look for recovery. It will take a longer period of time to prove this, but I believe that the future will bear out this statement as a fact. The expectancy of life for people of the age of our minimal discharges cannot be better than the results obtained in these cases.

The prognosis of cases beyond the minimal stage gradually becomes more serious, depending upon the extent and the severity of the disease. In Table XVI.-C far advanced cases for the entire period (1909-1921) show 66.58 per cent dead in 1922. It would have been interesting to have been able to have obtained definite information as to the cause of the deaths of these patients. However, I am satisfied that at least nearly all of the far advanced cases died from tuberculosis, or as a result of having had tuberculosis. It was impossible for us to get accurate information as to the cause of death and the date of death in the majority of these cases.

After a study of these discharges it is not necessary to call your attention to the fact that we must improve our methods or means of reaching the disease before it has passed beyond the incipient stage, if we may expect to get better and more lasting results from sanatorium treatment of tuberculosis.

TABLE I.
Patients discharged during 1909. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	1					1	
Suspicious	0						
Minimal	8	1	1	2			4
Mod. Advanced	13					1	12
Far Advanced	8						8
Total	30	1	1	2		2	24
	100%	3.33%	3.33%	6.67%		6.67%	80.00%

TABLE II.
Patients discharged during 1910. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	2				1		1
Suspicious	0						
Minimal	30	6				9	15
Mod. Advanced	39	5				3	31
Far Advanced	43				1	4	38
Total	114	11			2	16	85
	100%	9.65%			1.75%	14.04%	74.56%

TABLE III.
Patients discharged during 1911. Report on condition for the year 1922.

	Number	Working Full time	Working art time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	4					3	1
Suspicious	1						1
Minimal	41	13	4	1		7	16
Mod. Advanced	112	12	1	1		11	87
Far Advanced	111	7	6		1	6	91
Total	269	32	11	2	1	27	196
	100%	11.93%	4.09%	.74%	.37%	10.04%	72.83%

TABLE IV.

Patients discharged during 1912. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	1	-------	-------	-------	-------	1	-------
Suspicious	0	-------	-------	-------	-------	-------	-------
Minimal	44	29	4	2	-------	7	2
Mod. Advanced	61	15	3	1	1	2	39
Far Advanced	149	16	8	1	-------	9	115
Total	255	60	15	4	1	19	156
	100%	23.53%	5.88%	1.57%	.39%	7.45%	61.18%

TABLE V.

Patients discharged during 1913. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	1	1	-------	-------	-------	-------	-------
Suspicious	1	1	-------	-------	-------	-------	-------
Minimal	45	27	3	1	2	2	10
Mod. Advanced	35	17	2	-------	-------	-------	16
Far Advanced	117	13	5	2	1	-------	96
Total	199	59	10	3	3	2	122
	100%	29.65%	5.02%	1.51%	1.51%	1.00%	61.31%

TABLE VI.

Patients discharged during 1914. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	0	-------	-------	-------	-------	-------	-------
Suspicious	5	-------	-------	-------	-------	-------	5
Minimal	55	32	9	2	-------	8	4
Mod. Advanced	63	31	7	3	1	4	17
Far Advanced	184	27	6	6	7	5	133
Total	307	90	22	11	8	17	159
	100%	29.32%	7.17%	3.58%	2.60%	5.54%	51.79%

TABLE VII.

Patients discharged during 1915. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	4	2	-------	-------	-------	1	1
Suspicious	4	1	-------	-------	1	-------	2
Minimal	37	24	6	1	2	4	-------
Mod. Advanced	81	51	7	1	-------	7	15
Far Advanced	215	33	12	8	1	4	157
Total	341	111	25	10	4	16	175
	100%	32.56%	7.31%	2.93%	1.18%	4.70%	51.32%

TABLE VIII.

Patients discharged during 1916. Report on condition for the year 1922.

	Number	Working Full time	Working part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	2	1	-------	-------	-------	1	-------
Suspicious	3	2	-------	-------	-------	1	-------
Minimal	31	23	3	-------	2	1	2
Mod. Advanced	131	73	22	7	3	4	22
Far Advanced	238	52	19	13	2	9	143
Total	405	151	44	20	7	16	167
	100%	37.28%	10.87%	4.94%	1.73%	3.95%	41.23%

TABLE IX.

Patients discharged during 1917. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	2	1	-------	-------	-------	1	-------
Suspicious	7	1	-------	-------	-------	2	4
Minimal	45	35	4	-------	1	1	4
Mod. Advanced	94	54	18	2	-------	5	15
Far Advanced	227	44	18	15	5	8	137
Total	375	135	40	17	6	17	160
	100%	36.00%	10.67%	4.53%	1.60%	4.53%	42.67%

TABLE X.

Patients discharged during 1918. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	5	3	-------	2	-------	-------	-------
Suspicious	3	2	-------	-------	-------	-------	1
Minimal	98	64	16	2	2	6	8
Mod. Advanced	79	39	10	6	3	7	14
Far Advanced	226	35	22	17	4	12	136
Total	411	143	48	27	9	25	159
	100%	34.79%	11.68%	6.57%	2.19%	6.08%	38.69%

TABLE XI.

Patients discharged during 1919. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	1	-------	-------	-------	-------	-------	1
Suspicious	5	1	1	-------	1	-------	2
Minimal	137	99	19	5	7	6	1
Mod. Advanced	94	35	18	6	4	4	27
Far Advanced	292	40	30	13	6	6	197
Total	529	175	68	24	18	16	228
	100%	33.08%	12.86%	4.54%	3.40%	3.02%	43.10%

TABLE XII.

Patients discharged during 1920. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	17	5	4	1	------	------	7
Suspicious	22	14	5	3	------	------	------
Minimal	116	69	23	7	3	3	11
Mod. Advanced	101	44	28	14	3	1	11
Far Advanced	327	49	36	46	5	2	189
Total	583	181	96	71	11	6	218
	100%	31.04%	16.47%	12.18%	1.89%	1.03%	37.39%

TABLE XIII.

Patients discharged during 1921. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	7	4	------	------	------	------	3
Suspicious	22	7	5	2	3	1	4
Minimal	131	64	42	19	4	2	------
Mod. Advanced	112	41	36	15	6	3	11
Far Advanced	287	37	64	48	7	1	130
Total	559	153	147	84	20	7	148
	100%	27.37%	26.30%	15.03%	3.58%	1.25%	26.47%

TABLE XIV.

Total discharges 1909-1921, inclusive. Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Non-Tuberculous	47	17	4	3	1	8	14
	100%	36.17%	8.51%	6.39%	2.13%	17.02%	29.78%
Suspicious	73	29	11	5	5	4	19
	100%	39.72%	15.07%	6.85%	6.85%	5.48%	26.03%
Minimal	818	486	134	42	23	56	77
	100%	59.41%	16.38%	5.14%	2.81%	6.85%	9.41%
Mod. Advanced	1015	417	152	56	21	52	317
	100%	41.08%	14.98%	5.52%	2.07%	5.12%	31.23%
Far Advanced	2424	353	226	169	40	66	1570
	100%	14.56%	9.33%	6.97%	1.65%	2.72%	64.77%
Total	4377	1302	527	275	90	186	1997
	100%	29.77%	12.04%	6.28%	2.05%	4.24%	45.62%

TABLE XV.

Minimal, Moderately Advanced (and Far Advanced discharges 1909–1921, inclusive. Omitting Non-tuberculous and suspicious.) Report on condition for the year 1922.

	Number	Working Full time	Working Part time	Not Working	Living Working time Not reported	Not Located	Dead
Minimal	818	486	134	42	23	56	77
	100%	59.41%	16.38%	5.14%	2.81%	6.85%	9.41%
Mod. Advanced	1015	417	152	56	21	52	317
	100%	41.08%	14.98%	5.52%	2.07%	5.12%	31.23%
Far Advanced	2424	353	226	169	40	66	1570
	100%	14.56%	9.33%	6.97%	1.65%	2.72%	64.77%
Total	4257	1256	512	267	84	174	1964
	100%	29.50%	12.03%	6.27%	1.98%	4.09%	46.13%

Of the 4,257 c assed as tuberculous, 818 or 19.22% were Minimal, 1,015 or 23.84% were Moderately Advanced, 2,424 or 56.94% were Far Advanced.

TABLE XVI. (A)

Report of discharged patients for the year 1922. (Omitting patients "Not Located.") Also see Chart I.

Minimal	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	Totals
Living	4	6	18	35	33	43	33	28	40	84	130	102	129	685
	50.00%	28.57%	52.94%	94.59%	76.74%	91.49%	100%	93.33%	90.91%	91.30%	99.24%	90.27%	100%	89.90%
Dead	4	15	16	2	10	4	0	2	4	8	1	11	0	77
	50.00%	71.43%	47.06%	5.41%	23.26%	8.51%	------	6.67%	9.09%	8.70%	.76%	9.73%	------	10.10%
Total	8	21	34	37	43	47	33	30	44	92	131	113	129	762
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

TABLE XVI. (B).

Report of discharged patients for the year 1922. (Omitting patients "Not Located.") Also see Chart II.

Mod. Advanced	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	Totals
Living	0	5	14	20	19	42	59	105	74	58	63	89	98	646
	------	13.89%	13.86%	33.90%	54.29%	71.19%	79.73%	82.68%	83.15%	80.56%	70.00%	89.00%	89.91%	67.08%
Dead	12	31	87	39	16	17	15	22	15	14	27	11	11	317
	100%	86.11%	86.14%	66.10%	45.71%	28.81%	20.27%	17.32%	16.85%	19.44%	30.00%	11.00%	10.09%	32.92%
Total	12	36	101	59	35	59	74	127	89	72	90	100	109	963
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

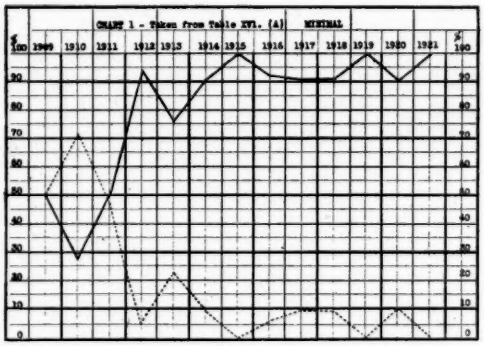
TABLE XVI. (C)
Report of discharged patients for the year 1922. (Omitting patients "Not Located.") See also Chart III.

Far Advanced	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	Totals
Living	0	1	14	25	21	46	54	86	82	78	89	136	156	788
		2.56%	13.33%	17.86%	17.97%	25.70%	25.59%	37.56%	37.44%	36.45%	31.12%	41.85%	54.55%	33.42%
Dead	8	38	91	115	96	133	157	143	137	136	197	189	130	1570
	100%	97.44%	86.67%	82.14%	82.03%	74.30%	74.41%	62.44%	62.56%	63.55%	68.88%	58.15%	45.45%	66.58%
Total	8	39	105	140	117	179	211	229	219	214	286	325	286	2358
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

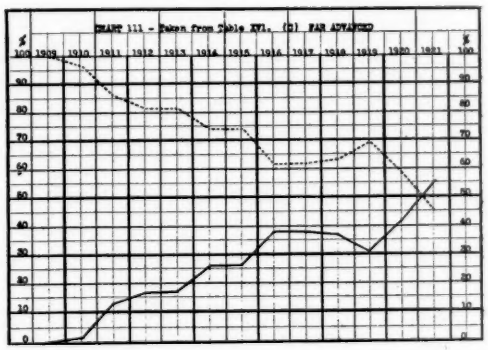
TABLE XVI. (Summary of Divisions A, B and C.)
Report of discharged patients for the year 1922. (Omitting patients "Not Located.") Also see Chart IV.

Minimal Mod. Advanced and Far Advanced	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	Totals
Total Living in 1922	4	12	46	80	73	131	146	219	196	220	282	327	383	2119
	14.29%	12.50%	19.17%	33.89%	37.44%	45.96%	45.91%	56.74%	55.68%	58.20%	55.62%	60.78%	73.09%	51.90%
Total Dead in 1922	24	84	194	156	122	154	172	167	156	158	225	211	141	1964*
	85.71%	87.50%	80.83%	66.11%	62.56%	54.04%	54.09%	43.26%	44.32%	41.80%	44.38%	39.22%	26.91%	48.10%
Totals	28	96	240	236	195	285	318	386	352	378	507	538	524	4083
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

*Note—One hundred and twenty-four (124) of the total number of deaths occurred during sanatorium residence .



Solid line, patients living. Dotted line, patients dead.



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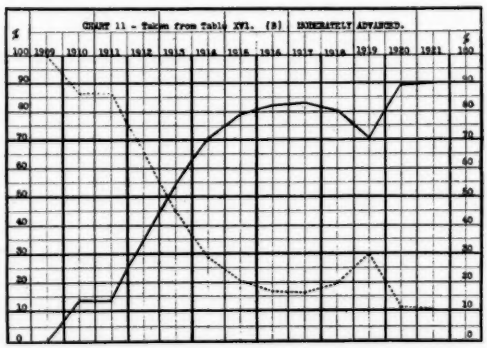

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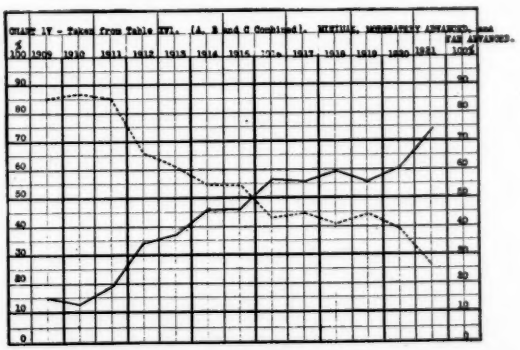
CHART IV - Taken from Table XVI. (A, B and C Combined). MINIMAL, MODERATELY ADVANCED, and FAR ADVANCED.
1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921

Solid line, patients living. Dotted line, patients dead.

DISCUSSION.

DR. W. E. BROWN, Blue Ridge Sanatorium: Mr. President, I would like to emphasize Dr. Nicholls' last statement. You will note that only about 10 per cent of the incipient cases, who have been discharged from the Sanatorium from its opening in July, 1909, through 1921, are dead. A large percentage of these cases necessarily had influenza during the "flu" epidemic and no doubt quite a number died of that disease. The outlook for the incipient case is exceedingly good; the outlook for the moderately advanced case is fair; but for far advanced cases it is questionable, in my mind, as to whether from an economic standpoint it is worth the money, which the State spends to treat them. If the profession could only get these cases when in the early stages, not dismiss them with a tonic; but make a thorough examination of the chest, and not wait until the case is hopeless before sending to a sanatorium! I frequently have this appeal brought to me, "Doctor, can you take So-and-So into the Sanatorium? He is down and out and cannot get adequate treatment at home?" It is a touching appeal, but should the State, with its limited bed capacity, treat a case like that if early cases can be found to fill those beds?

DR. CHARLES R. GRANDY, Norfolk: I want to go a step farther in regard to the care of the far advanced cases. These should not be sent a long way from home. The State of Virginia should have progressed far enough now to take care of these cases without sending all to Catawba. They interfere with the treatment of the early, curable cases. There is nothing so discouraging as to have others getting along badly or dying. The different communities should get better facilities to take care of patients, that this institution was not built to take care of.

DR. R. B. JAMES, Danville: This report is the most agreeable surprise to me. That 80% of the incipient cases of tuberculosis can be cured is certainly encouraging, but Dr. Nicholls suggests that the failure to cure the more advanced cases makes it impractical for the State to attempt treatment for such cases. This brings up the question, does segregation of these cases diminish the aggregate number of cases in the State? If it does, then the State should continue to care for them.

In Danville we have a Sanatorium where all cases are cared for; most advanced cases are committed to our institution. The incipient ones are kept until they can be cared for at State institutions. There is often much delay in getting these cases transferred. We find that removing all cases from the family has very much reduced the whole number of such cases in our city, and it is very probable that if all cases could be cared for by the State or local authorities, we would greatly diminish this scourge in our State.

DR. W. E. VEST, Huntington, W. Va.: I would like to ask Dr. Nicholls what he classifies as minimum and what as far advanced tuberculosis. Dr. Brown's statement that he did not consider it worth while to treat far advanced cases in a Sanatorium appears to me entirely too radical. It certainly seems worth while, if we are able to salvage so great a percentage of these unfortunates as Dr. Nicholls has shown can be done, that far advanced cases should be given sanatorium treatment wherever possible. If out of a great many men who have advanced lesions, a few become arrested cases and are able to work, it impresses me that we are repaid for our efforts.

DR. BEN A. RICE, Forest Depot: There is no question about the necessity of hospitalizing advanced cases of pulmonary tuberculosis, both as a humane and an economic measure.

There is a question whether they should be placed near the mild cases, even if under the same management, on account of the psychological effect and because they are managed quite differently.

DR. J. B. NICHOLLS, Catawba Sanatorium: I do not consider it an advisable thing to send an advanced, hopeless case of tuberculosis away from home to die. The admission of such a case to a sanatorium has a bad effect upon the patients already in the sanatorium who are making a favorable progress; and the unimprovement or the death of a patient of this type while in the sanatorium has a tendency to cause an unfavorable reaction against sanatorium treatment and training among the patient's home people or in his community.

As a matter of fact, the sanatorium had received a hopeless case—a case in which nothing could be done other than to relieve the patient's symptoms to a certain extent and to make life as endurable as possible so long as it should last. I have seen the end hastened by the exertion and excitement necessary to move a patient from his home to a sanatorium. An acute case beyond the minimal, or incipient, stage often becomes definitely worse from the travelling necessary to reach the sanatorium.

These patients should be kept strictly in bed at home; and later on, if there should be a lessening of symptoms, or if the disease should show any tendency to quiet down, they could then be sent to a sanatorium. The advisability of sending such a patient to a sanatorium even at this point is a matter of judgment, which should and must be left to the discretion of the family physician.

After a patient has become hopeless and more or less bedridden, he is unable to go about to spread forth contagion to the public at large. It now becomes only necessary to isolate him in the home in order to properly protect the home people. In such cases the same precautions should be taken in the home to prevent the continual spread of infection that are taken in a sanatorium. The greater the dosage of infection and the longer continued, the greater the chance of an eventual "breakdown" from tuberculosis.

DIABETES MELLITUS.*

By W. P. JACKSON, M. D., Roanoke, Va.

This disease has been known since the first century A. D. It was given a good description by Willis in the seventeenth century. The modern study of the disease dates from Claude Bernard's work in 1857. Several investigators commented on the occasional association of diabetes and the pancreatic disease, and Nicholas Senn probably was the first to produce experimental diabetes by total extirpation of the pancreas in a dog in 1886. The dog lived nine days, retained a good appetite, but lost five pounds. There is no record of urinalysis being made for sugar.

Von Mering and Minkowski in 1889 proved that removal of the pancreas produced a fatal diabetes. Lepine, MacCallum, and Opie are

*Read before the Roanoke Academy of Medicine, October 15th, 1923.

XUM

mentioned as pioneers in advancing the theory and proving that the pancreas functions as a gland of internal secretion, and that the disease of the pancreas is associated with diabetes. Clarke, in 1917, gave good evidence of the existence of a pancreatic internal secretion by removing the heart and pancreas of animals and perfusing these organs with Locke's solution containing glucose. He proved that sugar disappeared into the heart more rapidly when the circuit included the pancreas than when the heart alone was perfused. He also discovered that the specific rotation of sugar is changed on passing through the pancreas.

Next came attempts to prepare extracts of the pancreas which might be used in the treatment of diabetes. Many investigators attempted this, and it is thought that at least one of these obtained the active principle, but he never produced it suitable for use on patients. Grafts of pancreatic tissue were tried but this was not found of value in man because the grafts made from one animal species into another invariably atrophied.

The production of the extract suitable for use in patients was conceived and executed by Banting and Best and the first patient was treated in January, 1922. Since that epoch making date, the attention of the whole medical world has been drawn to the new treatment for diabetes.

They first ligated the pancreas of animals and caused atrophy of the acinous tissue and consequent prevention of the production of external secretion, which destroys the action of the internal secretion. After a period of about ten weeks the pancreas was removed and the internal secretion extracted from it. This gave a potent extract.

They next attempted to exhaust the normal pancreas by repeated injections of secretin and then extraction of this pancreas. A potent material was also obtained from this, but not every time. The third step was to extract from the pancreas of fetal calves of under five months' development. Previous to the fifth month of intra-uterine life, no proteolytic enzyme is supposed to be formed. This also was quite potent. The fourth step was to extract with alcohol from the whole pancreas of animals. This, when concentrated, proved to be as potent as that from a degenerated gland, an exhausted gland, or a fetal gland, and is the extract now used.

Best and Scott have recently proven that insulin can be extracted from other tissues, such as submaxillary, thymus, and thyroid glands, and from liver, spleen, and muscle tissues, but only a small fraction as much as from the pancreas.

In discussing the treatment of diabetes, the first subject is the diet. Diabetes is considered a disturbance of all the elements of metabolism, the fats, proteins, and carbohydrates. Adams has very ably discussed this subject and takes it up under four principles. The first of these is total dietary restriction. Allen and Joslin have proven this. This principle of limiting food calories to actual needs is valuable to all, especially to the diabetic. The chief advantage in diabetes lies in the depressing effect on the metabolic rate.

The second principle is one of protein restriction. Protein by some authors is considered almost a poison in diabetes. The ideal diet in diabetes is one which contains just sufficient protein to keep the patient in nitrogen equilibrium. Practically, this represents about 1 gram protein for each kilo of body weight. Some clinics figure that 2/3 gram protein for each kilo is sufficient. Growing children naturally require slightly more and Geyelin gives as much as 3 to 4 grams per kilo, especially while they are being treated during the period of under-nutrition. It is generally agreed that the excellent results obtained by Newburgh and Marsh with their high fat diet is due in considerable part to the associated protein restriction.

The third principle in the diet is carbohydrate restriction. Woodyatt's idea is "That a weakened pancreas in the presence of a sufficient supply of glucose might be stimulated into a state of fatigue and decreased function, and that a sufficient diminution of the glucose supply might then lessen the stimulation, place the organ in a state of comparative rest and permit it to recuperate up to a certain limit." From this it seems proper to give just sufficient carbohydrates to balance the ketogenic effect of the fatty acids.

The fourth principle is the question of balancing the ketogenic (fatty acid) and the antiketogenic (glucose) materials in a food mixture. Too much fat produces acidosis and this, unchecked, produces coma. Newburgh and Marsh have shown what may be done with a high fat diet, but there is a limit to this.

Woodyatt suggested that there is a molecular relationship between fatty acid and glucose in the oxidation of fat in the body. Shaffer, in his experiments has quite definitely proven this theory of Woodyatt's and this discovery of the mechanism of acetone formation is considered by some more important than the discovery of insulin. The molecular ratio of fatty acid and glucose is 270: 180, or 1.5:1 and this ratio is the one held best in preventing acidosis. After this work of Shaffer's, Woodyatt gave us a clear rational statement of the object and method of diet adjustment in diabetes. His idea is to combine food-stuffs so that for every molecule of fatty acid that might arise from the food, one molecule of glucose, or its equivalent, will be available.

In arriving at this ratio, certain formulas are necessary for calculation. It has been found that glucose is formed from the food as follows: .58 P + .1 F + C =G, in which P represents proteins, F fats, C carbohydrates, and G glucose. Fatty acid is formed as follows: .46 P plus .9 F equals F. A. Since the ratio of molecular weights of fatty acids and glucose is 270: 180 or 1.5:1, therefore to produce one molecule of glucose for every molecule of fatty acid it is necessary to have 1 gm. of glucose for every 1.5 gm. of fatty acid. This necessitates considerable calculation. In order to diminish this work, tables have been prepared. Hannon has worked out a very comprehensive one and a very useful one in the form of a graph. Wilder and Adams have also prepared one in which the total caloric requirements of the individual are represented. I think both are very good and it is left with the individual as to the choice.

It is true that Newburgh and Marsh often disregard this ratio of 1.5 to 1, and they seem to produce no acidosis. The question arises, is this a wise procedure? There seem to be two possibilities. The patient may store fat, which is not considered desirable unless he is decidedly under-nourished, for fat precedes diabetes. The other possibility is that some acetone bodies may be excreted in some cases, which is to be avoided if possible. It has been estimated that sugar tolerance will increase in at least 80 per cent of the cases if they are kept free from acetone bodies. The presence of these bodies in the urine is more harmful than is the presence of sugar.

McCann and his co-workers have reported some cases that I think demonstrate very nicely the closeness of this ratio to ketonuria. One diagram shows very beautifully how as the ratio of F. A. to G. gets down to 1.5 the acetone bodies disappear from the urine.

By observing the above principles in the dietary of a diabetic, a fairly large percentage will be able to get along well on a maintenance diet without insulin. For the remaining cases, the insulin is truly a life saver. The next question is how much and how often is it to be given? This depends on the severity of the case. I believe it is better to have no fixed rule but to begin with a small dose and gradually increase until the desired results are obtained. The idea, of course, is to fulfill the requirements for the patient's status in life and the proper ratio of the food-stuffs observed, and then to give just sufficient insulin to keep his blood sugar approximately normal. In the mild cases, this can be done very well with one injection daily, and the time for that, it is generally agreed, is about fifteen to thirty minutes before the breakfast meal. This will be found to work very well when not more than 20 or 25 units are given daily. If more than that is required, there are two reasons why at least two doses are advisable. In the first place, a large injection at one time may come when there is not enough glucose in the circulating blood to prevent a hypoglycemia. In the second place, the effect of the insulin does not last long enough to prevent a rather high glycemia, and with it, a glycosuria during the night.

In discussing the complications, acidosis with coma is the first condition that appeals to us. In this condition there is an excess of the acetone bodies, and the object is to rid the body of these. Usually a considerable amount of glucose is present in the circulating blood, so a sufficient dosage of insulin to metabolize the glucose present will in many cases overcome the acidosis. Large doses of insulin at this stage, sometimes as much as 30 units repeated every four to six hours, are required. This dosage may use up a sufficient glucose to produce a very severe or even fatal hypoglycemia. To prevent this danger, glucose may be given by mouth if sufficiently conscious, per rectum or, in emergencies, intravenously.

An adjunct to that is the administration of sodium bicarbonate. The advisability of giving alkalies in the treatment of diabetic aci-

XUM

dosis has been much discussed. For a short while the intravenous administration of sodium bicarbonate was quite popular. Now it is seldom given. In spite of this swerving away from it, many writers seem to think a small amount given early in the treatment of coma decreases the dyspnea and increases the comfort of the patient.

Forcing of fluids to the extent of a quart every six hours is valuable. They furnish a vehicle for the glucose, promote diuresis, and relieve the dehydration.

Infections, it is well known, very seriously disturb the metabolism in diabetes. In these cases insulin, if boldly, but wisely used, produces great good. These patients, in the presence of infection are usually resistant to the action of insulin—as much as 100 units may be required in a day, or even more. On account of unusual resistance and the rapid fluctuation in the patient's tolerance by the degree of the intoxication and also the variableness of their appetites, the dangers are much greater than otherwise. Under such circumstances, the insulin is given in multiple small doses sufficient to combat the acidosis, but with no regard for the glycosuria, and the amount of available glucose here is increased to prevent a possible hypoglycemia.

The next question considered is hypoglycemia. This reaction manifests itself when the blood sugar gets down to about .07 — .08 per cent. The symptoms begin first as a feeling of nervousness or tremulousness, then an excessive hunger or a weakness with a feeling of "goneness." The mild reactions may show no more than this but the severe ones will show in addition many others as delirium, confusion, syncope, collapse, and death. This calls for glucose immediately and in the mild cases a little sugar eaten is sufficient; in the severe cases it may be necessary to give it intravenously. This reaction comes on usually about two hours after an injection, but the taking of food may delay it at least four hours so that it may develop six hours after an injection and this is to be emphasized in those cases that require a dose just before the evening meal. On account of the rapidity with which these reactions develop the treatment must be instituted immediately.

In many clinics the patients during their stay in the hospital are given sufficient insulin to produce a slight reaction. Fortified with this knowledge they are instructed to carry with them always glucose, or its equivalent in some form, as a lump of sugar, and with the first appearance of these symptoms to eat the sugar.

In order that these patients may keep themselves on a proper diet and become more independent, a little instruction during their stay in the hospital is very helpful. They may be taught to test their own urine for sugar and acetone bodies, and to give their own injections of insulin. It is especially important that they be instructed to weigh their food and, if sufficient time and intelligence are available, they may be taught the composition and fuel value of their foods. Then, with a knowledge of what they require, they can "juggle" their own diets and not have to adhere to one fixed diet, a copy of which may be given them on leaving the hospital.

I want to discuss a few cases for a moment or two.

Mrs. G., age 60, wt. 70 kilo, entered the hospital July 9th, with a blood sugar of .22 per cent and putting out five gms. sugar daily. No acetone bodies were present. On a diet of P 50 gm., F 100 gm., and C 50 gm., her urine sugar disappeared in a few days. By using 15 — 20 units of insulin daily we got her blood sugar to .17 per cent. She went home a short time later, on a diet of approximately 2,000 calories, with P 65 gm., F 170 gm., and C 60 gm. and was instructed to take about 10 units of insulin daily. She has been allowed to get around and do most of her housework and feels well. At present she is taking only 5 units daily, remaining sugar-free and feeling fine, with no loss of weight.

Mrs. B., age 43, wt. 60 kilo, entered the hospital the same day, with a blood sugar of .54 per cent and excreting 7 gm. sugar daily with an occasional trace of acetone. She was put on a similar diet, but received about 25 units daily of insulin to bring her blood sugar to approximately normal, and make the urine sugar-free. She also went home the same day. They happen to be neighbors and when one makes a move so does the other. I gave her a diet similar to the other. That diet has a little more protein possibly than they actually need, but due to their having to do most of their housework, I thought I would be sure to give them enough. The rest of the diet

is made up so that in the end the ratio of fatty acid to glucose is approximately 1.5:1.

They are both doing well now, and while Mrs. B. threatens to rebel sometimes against the daily hypodermic, she realizes what it means and is sticking to it. She is at present taking 10 units daily in one injection. I heard from her a few days ago, saying she is sugar-free and doing all right.

Mr. M., age 29, wt. 63 kilo, entered the hospital August 27th, with a blood sugar of 43 per cent and a daily output of 7 gm. sugar. No acetone bodies present. On a diet of P 40 gm., F 120 gm., C 60 gm., he rapidly improved. He was in a hurry to get out of the hospital and, without waiting to see what diet alone would do for him, we gave him 15 units of insulin one day. The next day his blood sugar was .17 per cent and urine sugar-free. This was his third day in the hospital. He has not had another dose of insulin since. We sent him home four days later on a diet approximately the same as the others. I asked him to let us know how he progressed. A week after he got home, he wrote he was doing well and his urine continued sugar-free. I sent him a diet of 2,400 calories with the ratio of fatty acids and glucose remaining approximately 1.5:1 and told him he could go back to his carpenter work. A few days ago he wrote that he was still sticking closely to that diet. His doctor says his urine continues sugar-free and he says he is feeling fine, has gained five pounds in weight, and is working regularly.

A fourth case I mention that is not doing so well. Mr. I. S. R., age 47, wt. 48 kilo. On admission his blood sugar was about 51 per cent and daily output of sugar about 20 gm. On a diet of 1,500 calories with a fatty acid, glucose ratio of 1.6 he required approximately 30 or 40 units of insulin daily. He got along very nicely for awhile but we found that when he felt disposed to he would help himself to other diets than what were prescribed for him and consequently, when things were apparently going all right his urine would suddenly start putting out considerable sugar, and his blood sugar as suddenly rise. Under those circumstances we sent him home on a diet just sufficient to fill his needs, with 25 units of insulin daily. I am sure he is not sticking to his diet and am daily expecting him to be brought in in coma.

We have had one or two cases with infection who required surgical operations to control the infection. With regulation of their diet and the use of insulin they rapidly recovered. Some others have gone home and remained sugar-free by keeping on a properly balanced diet and without insulin.

In conclusion, I want to say that, if we expect to get our patients back to earning a livelihood, we must give them enough food to supply the required energy and, in the proportion as outlined above, but no more, and give them just enough insulin to properly utilize it, because as Joslin has so well said, "Overnutrition is harmful in health, doubly harmful in diabetes, and we see no reason why insulin should make it safe. We do not believe in diabetic patients walking on insulin stilts any more than is necessary." And to quote him further, "For the wise, who may be rich or poor, young or old, and for the innocent who can be cared for, insulin is a benefit, but for the ignorant who likewise may be rich or poor, young or old, it can be dangerous, and a gift of free insulin to such is like casting away pearls."

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XUM

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Mountain Trust Building.

THE RADIOLOGICAL TREATMENT OF DISEASED TONSILS.*

By JAMES W. HUNTER, Jr., M. A., M. D., Norfolk, Virginia.

It is usually conceded that the three R's of reading, 'riting and 'rithmetic form the basis of all education. It is by the reading of manuscript and the printed page that our thoughts are conveyed from one to another. It is the art of writing that has made their transcription possible. In a more liberal sense it is the art of writing with a connotation of logic, diction and rhetoric that has made these same thoughts worthy of preservation or clothed them in a suitable garment. But it has also remained for arithmetic and the allied branches of mathematics to make all scientific and other achievement possible. And so it is with the theory of focal infection. It is the three T's that furnish most of our bodily ills. It is teeth, tonsils and "tummy," these three. And of these the teeth and tonsils play the leading roles.

To the teeth we shall not now devote ourselves. Suffice it to say that much has been attributed to dental sepsis. Great investigators, like Hunter and Rosenow, have proclaimed that the primary portal of most of the infections is the teeth. Great surgeons, like Mayo and Hunner, claim that even surgical infections of the urological system are in many cases directly due to dental disease. So that it behooves us to study the teeth, to examine them thoroughly, and to eliminate the infection. This is comparatively an easy thing to do. Roentgen and his successors have provided us with a means of accurate diagnosis. Modern dentistry has suggested a means of elimination. This, naturally, calls into consideration the school of exodontists. But to many, as to myself, there comes the conviction that, as in the surgical world an osteomyelitis or compound fracture is no longer to be considered the occasion for an amputation, so the dental surgeon of the near future will conserve the function of the teeth. He will prevent and cure the infection. And in this way our earthly happiness will be conserved.

We now pass to the second of the immortal T's. We shall consider the tonsil. These glands have, no doubt, an inherent function to perform, else nature would not have provided them. But there is scarcely a greater focus of infection than the diseased tonsil. Anatomically it is in such intimate connection with the glands of the neck and blood stream that the direct transmission of sepsis is comparatively simple. Then, too, a lymphoid mass possessed of crypts has the added danger of harboring a nucleus for the culture of the various bacteria, admirably serving continually to infect the entire digestive tract. Of the direct effects of diseased tonsils we are all familiar, recurrent attacks of tonsillitis, abscess of the tonsils, quinsy, etc. Of the indirect effects of the diseased tonsils volumes have been written, of rheumatism, of cardiac diseases, even of hyperthyroidism. Verily, our second T is by no means a negligible factor.

Hence, the logic of removal. The complete extirpation of the diseased tonsil will certainly rid the system of infection and in suitable cases the wisdom of such a procedure can not be questioned. But this also has its drawbacks. The old operation of tonsillectomy, whereby the portion of the tonsil projecting into the throat was removed by a snare or tonsillotome, only to leave an ugly stump and a large buried mass, must be condemned. If the tonsil is to be properly eradicated, the entire mass must be dissected out. As little of the tissue should be left as possible. And, while perhaps in the

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child the operation is not necesarily an extreme one, in the adult it becomes of major importance and has its contra-indications, as we shall see.

No surgeon would knowingly operate on a hemophiliac. He would court disaster by an oozing and hemorrhage likely to prove fatal. Even in normal individuals the question of hemorrhage must be considered. Only the other day one of my friends informed me that he was careful to tie all of the bleeding points. Nor would one care to operate upon a patient with a high basal metabolism. I have at present such a case under treatment. A young lady, age 23, suffers with hyperthyroidism with a basal metabolism of +45 due, in my opinion, to diseased tonsils. Her neck is normal in size; her teeth and sinuses are negative; she has no substernal thyroid. And again, high blood pressure, cardiac disease or advanced age, would certainly be regarded as a contra-indication.

But perhaps the greatest bugbear, which the surgeon meets is the employment of some form of general anaesthesia. The risk of the inspiration of blood, mucus or other material is not devoid of extreme danger. Nor does the employment of local or conductve anaesthesia completely eliminate the danger. There is scarcely any surgeon of large practice, who has not had a tonsillectomy to be followed by an abscess of the lung. Every roentgenologist has seen one or more examples. But perhaps the most available figures are those of Wessler and Jaches. Of the first 100 cases of abscess of the lung observed by them at Mt. Sinai Hospital, New York, there were twenty-seven aspiration abscesses of the lung. Of these twenty-one followed a tonsillectomy. All other operations contributed but six cases.

The well known action of the roentgen rays and the beta and gamma rays of radium upon lymphoid and adenoid tissue has naturally suggested their application to the tonsil. Thus, Murphy, Witherbee, Hussey and Sturm, of the Rockefeller Institute, report a series of forty-six cases, ranging from three and one-half to forty-five years, in which they were able to keep complete records, and about forty other individuals, who were treated, but did not return for examination. In all but four cases they obtained improvement. "Forty-six individuals with tonsils both hypertrophied and otherwise pathologically altered, some of whom had in addition adenoid masses and lymphoid deposits posterior to the pillars of the fauces, were given exposures to the X-rays. In all but four cases the treatment was followed by marked atrophy of the tonsils and other lymphoid deposits, attended by an opening and drainage of the tonsillar crypts." Waters, McCready and Hitchcock, of the Johns Hopkins Hospital, report a series of ten cases of chronic tonsillitis, one case of Sydenham's chorea, one case of chronic suppurative otitis media with chronic tonsillitis, and one case of acute catarrhal otitis media, treated by the roentgen rays. Of the cases of chronic tonsillitis, they write: "In each of these ten cases the clinical symptoms for which they originally came to the hospital have disappeared." And again: "The general appearance of the cases, which had two complete series of treatment was that they (the tonsils) had shrunken to normal size and no further treatment was necessary." To these I would add six cases of my own. One of these was treated entirely by the roentgen rays, one by radium alone and four by a combination of the two modalities. In every case the results have been all that could be desired.

The result of the new treatment will begin to be observed in from two to four weeks after the first treatment and will continue for at least six months. Briefly, we may expect a reduction or disappearance of the pharyngeal tonsil, an increase of the space between the pillars of the fauces, and a gradual disappearance of the symptoms, followed by a sense of well being. Usually the patient himself is the first to observe the change. He will tell you that his throat is larger; that he swallows better; that he is not troubled so much with sore throat. In one of my cases, a gentleman aged 51, the result has been most remarkable. Tonsils meeting each other in the midline and almost completely closing the pharynx, possibly an inch and a quarter in diameter, have been reduced to less than one-quarter of their former diameter. In another case, that of a young lady, in whom upon one side there was a ragged mass, the tonsils have practically disappeared and large knots to be felt upon either side of the neck are almost gone. In a case treated only once by radium, where surgical intervention was not to be considered on account of a previous nephrectomy and a maxillary sinusitis, the patient promptly re-

XUM

covered. The tonsils have a natural size and appearance. But the patient reported that following the application of the radium her rheumatoid condition was aggravated. She felt the usual pain accompanying a tonsillitis. In one or two cases some dryness of the throat resulted temporarily, only to yield in a few days. In short, strange as it may appear, the new treatment, clinically considered, seems to possess few or no drawbacks.

This last statement, however, naturally calls into question the permanent riddance of the tonsil from the streptococcus hemolyticus. Thus Murphy, Witherbee, Craig, Hussey and Sturm report that "thirty-six of forty individuals showed hemolytic organisms to be present. Of these seven became negative one week after treatment, fourteen after two weeks, eight after three weeks, and one after four weeks, making a total of thirty of the thirty-six treated cases which became negative." Hickey reports a series of diphtheria carriers treated by him in connection with the health department of Detroit. "We found that there were nineteen throat cases treated, with a definite cure of fifteen. This gives a percentage of seventy-nine." He continues: "We can, therefore, summarize as follows: In untreated cases of diphtheria carriers, thirty-four per cent of spontaneous cures; cases treated with mercurochrome, sixty-eight per cent of cures; pharyngeal cases treated by the roentgen rays, eighty per cent of cures." Waters, McCready and Hitchcock, on the other hand, report that in eight cases treated, seven were found to harbor the hemolytic streptococcus.

The technique employed varies somewhat with the individual operator. Thus Witherbee and his associates began their work with an 8 inch spark gap, 5 milliamperes of current, a 10 inch distance between the target and highest portion of skin, a filter of 3 mm. of aluminum and sittings varying from three to seven minutes. In his later work Witherbee uses a 7 inch spark gap with an exposure of three minutes and eighteen seconds, the other factors remaining the same, treatments being given every two weeks. Waters and his associates, on the other hand, use a technique employing a 7 inch spark gap, 5 milliamperes of current, a 10 inch target-skin distance, filtered through 4.5 mm. of glass and ½ inch of orthopedic felt. Two exposures are given every week for four treatments, or one series; and another series three or four weeks later. Simpson, who has done all of his work with radium, advises the use of the double strength placque, or 30 milligrams of radium, applied directly to the tonsil for one hour. In a personal communication he writes: "We have any number of tonsil cases and are using my placque in some few while in others we are inserting the emanation seeds. We find that the latter give more of a reaction here than does the radium placque."

Following the original technique of Witherbee and his co-workers, the roentgen rays are applied directly over both sides of the neck just below the angle of the jaw, care being taken to protect the parotid gland. I use a spark gap of 8 inches, 5 m.a. of current, a target-skin distance of 10 inches, a filter of 4 mm. of aluminum and a layer of chamois skin, and a time of four minutes. These treatments are repeated every two weeks for about eight times. In the meanwhile radium is applied directly to the tonsil. Following the technique suggested by Cameron, I use a special applicator of brass, in which 50 milligrams of radium are placed, this, in turn, being covered with rubber. These treatments last from one to two hours. No appreciable reaction has occurred. In my cases no second application has been found necessary. It will thus be seen that only the gamma rays are employed and, as the radium is applied inwardly and the roentgen rays externally, a very desirable system of cross fire irradiation has been obtained. Of the two modalities, if only one could be used, I should prefer the roentgen ray, as its application is attended by no discomfort and the glands of the neck are irradiated at the same time as the tonsils.

It will be seen that the treatment as outlined and employed by the various workers is devoid of danger. In the cases treated by Witherbee and myself there has been no reaction. This is as it should be, for the amount of irradiation employed at any one time is less than one-third of any erythema dose. Water's technique is somewhat more extended, yet, he reports that he has observed nothing more than a mild erythema. Nor does the amount of radium irradiation give rise to unpleasant symptoms; the only discomfort is at the time of the application. If we adopt the rule that 100 milligram-hours of the beta rays of radium are sufficient to obtain a mild erythema or 600

milligram-hours of gamma irradiation, it will be observed that no reaction is to be expected. Personally, I have applied 50 mgs. of radium as screened above to the throat for a total of twelve hours in three days for a carcinoma, with a promising result and no untoward symptoms.

To conclude: We have in the roentgen rays and radium a highly effective method for the treatment of diseased tonsils. A marked improvement and a clinical cure should be obtained in almost every case. The patient will suffer no loss of time or other inconvenience. Even in those cases in which no result has been obtained, no harm has been done and surgical intervention can still be considered.

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DISCUSSION.

DR. CLARENCE PORTER JONES, Newport News: Dr. Hunter is very enthusiastic, as is his usual custom; he is always filled with zeal. It is an established fact that careful surgical removal of tonsils under ether in a well appointed hospital is the procedure of choice. Yet there is much good in the radiological treatment of diseased tonsils. There are frequently seen cases in which, from pathological consideration, any anæsthetic, either general or local, is hazardous; such cases are saved and even cured by the rays.

I recall several such cases: one who was rayed over two years ago seems well, free from symptoms and, better still, resulted in the prompt clearing of albumen from the urine, which has not returned; another case was made albumen free about the same time, and improvement was so marked in the general physical condition that an operation under a quarter per cent. novocaine was permissible a year and a half later. Two other cases rayed about a year ago are today symptom free. I unquestionably endorse rays in all tonsil cases when surgery is hazardous.

I congratulate Dr. Hunter for bringing to our attention this subject at this time; above all things, his treatment is free from any danger.

SOME OBSERVATIONS IN THE STUDY OF ENDOCRINOLOGY.*

By J. H. HIDEN, M. D., Pungoteague, Va.

The subject of endocrinology is too broad and complex for me to attempt any full, symmetrical discussion in the length of time alloted to me. My aim, then, is that of suggestion, the stimulation of further thought, and the awakening of your own individual powers in utilizing what you already know. If I succeed in this, it may be of more value than the unloading of a volume of the most approved compilations.

My first observation is a very simple one; namely, that the subject of endocrinology has become one of the most universally popular in the study of medicine, and that this popularity seems to be increasing to an almost fanatical degree. Indeed, it is hardly extravagant to say that this field of study furnishes food for every calibre of intellect, and every degree of culture and taste in the broad universe. For the last two decades its interest has been increasing in almost geometrical progression, until we may now say it is engaging the attention of the reading world. Let me ask, why is this? My answer is, we can usually find in this field of study just what we are looking for; and that is fascinating indeed. For instance, the scientific, scholarly searcher of truth finds here innumerable phases of the most intricate and complex problems upon which he can easily expend his analytical powers. The progressive evolutionist, who is hardly satisfied with the limitations of the "Origin of Species," as presented in Darwin's discussion of "Natural Selection," sees in this field additional conceptions of evolution of a more modern character. The able materialist, who demands a tangible reason in every link of a chain of an argument, sees in it ample support for his fascinating materialism—the "Mechanistic Activation of the Kenetic Drive" (Crile). The religious enthusiast, of the Bryan type, sees in this field of study the antithesis of the dreaded Darwin doctrines, as found in an exaggerated view of the laws of adaptation and the preponderating influences of environment. The commercial frauds, the quacks, the charlatans, the nostrum venders see in this field a most inviting, productive source of information by which they can easily humbug an ever credulous public. Again, the

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shiftless moral degenerate, after reading in the yellow journals sensational articles on the functions of the ductless glands, comforts himself with the thought that after all, courage, manhood, and moral integrity are only the results of the productive influences of the internal secretions. Even the most pronounced coward is relieved of all humiliation when told that the most heroic military acts are now viewed in the light of glandular secretion. Once more, the old, tottering hypochrondriac awakens from his lethargy, reads the absurd claims of the nostrum venders, and sees in it all his glorious "Land of El Dorado." And since the discovery of insulin for pancreatic disease, the indolent epicurean in her obese, bloated condition, looks forward to greater license at a Delmonico's table, groaning with the sweet luxuries of the season. Who can wonder that the field of endocrinology should be universally popular?

All this may appear as a little playful exaggeration; well, perhaps so; but viewed in the light of the sociological changes of modern thought, we have ample support for the substance of these statements. Indeed, the extent and application of the study of the many phases of endocrinology seem too broad and complex for our comprehension, with our present state of knowledge. One of the most striking illustrations of this truth is found in the so-called "Evolution of Human Races in the Light of the Hormone Theory"—subject of Sir Arthur Keith, who, in June, 1922, delivered a notable lecture at the Johns Hopkins University. In this lecture he considered "the racial status and the form of the body as influenced by hormone production." His position was that "the hormones represent the elements of an automatic system for the control of growth," and, in the support of this position, subjects as gigantism, acromegaly and mongolism were dealt with in his discussion. Again, another support of this evolutionary theory comes from Dr. George H. Weaver, of Rush Medical College. In this statement he says: "From the study of cadavers in England, representing the inhabitants that have lived in that land at successive periods during the last 4,000 years, there is a convincing body of evidence that structural changes are taking place in the jaws, palates and faces of a large proportion of the present population of England. A full knowledge of the hormone system of the human body is likely to reveal not only the cause of these structural changes, but also the steps that may have to be taken to combat them." I mention these facts not for any practical help to us as physicians, but simply to emphasize the breadth of study which we may find in endocrinology. And we may go on almost indefinitely, taking up each feature of my present outline, and overwhelm us all with the most complicated problems of the most complex nature, until the whole subject matter of endocrinology may appear to be undergoing a state of evolutionary chaos—the Bolshevism of modern medicine.

Another view of the situation, however, will show a very different picture. Men of practical insight and discriminating judgment have arisen amidst all this evolutionary chaos, and have patiently and faithfully endeavored to clear the atmosphere of these hazy dreams and visionary fancies of the students of sensationalism. By the efforts of such men, little by little, solid, definite information has been culled out of the piles of rubbish and placed upon a solid basis. Indeed, clinical syndromes, laboratory findings, and therapeutical principles have been fairly well established, and these may be of great value to the careful, practical student of medicine. It is to this line of work I will now call your attention.

Let us consider some clinical syndromes of the functional disorders of the separate organs of internal secretion. These, of course, should be studied with such laboratory findings, when possible, as are commonly present in each classification. Under this head the disordered functions of the thyroid represent the most classical syndromes for endocrine study.

Here we have the syndromes of two definite pictures, exophthalmic goiter and myxedema, each of which is easily diagnosed by the fairly well-informed physician; but the ill-defined, intermediate state of each of these conditions often presents a very different problem, even to the skilled, experienced physician. Now, when we consider that we are more familiar with the functions of the thyroid gland than those of any other of the organs of internal secretion, how much more difficult are we likely to find the diagnosis of other endocrine disturbances when their respective syndromes are not well marked? These are herculean problems, and we have to go slowly before we can

develop any degree of skill in endocrine diagnosis.

Now, in this study, as has been so admirably pointed out by Dr. Lewellys Barker, of Baltimore, we should advance in studying the classical syndromes of the disordered function of each separate organ, and have these symptoms well fastened in our minds, before attempting the study generally of the more complex symptom-group of two or more glands of endocrine disturbance. In other words, the more glands involved in the varied symptom-group of endocrine disorder, the more difficult and complex is the diagnostic problem. As we advance moreover, in this line of work, other features will soon present themselves. It should always be borne in mind that the correlative relations of these glandular organs are very intimate, not only in regard to each other, but also in regard to other important organs and structures of the body.

Again, it is well to bear in mind that outside influences oftentimes, if not generally, play an important part in the etiology of endocrine disturbance. This may consist of faulty diet, climatic changes, unhygienic conditions, nervous strain, geographical situations, occupational pursuits, and, perhaps more than almost anything else, focal infections. I am not able in this brief paper to go into the details of these etiological factors in the processes of glandular disorders. It is sufficient to say that we should look in all these etiological factors for the dominant one in a complex disturbance, before settling upon an opinion of the real nature of the case. The question should be asked: is this glandular disorder the primary or secondary cause of ill-health? What is the dominant factor in the case? Now, among the various causative factors of endocrine disorders that I have already mentioned I wish to emphasize the importance of three, especially.

(1) *Focal Infection.* — About eighteen months ago I had a very practical lesson in this course of study. A woman of respectable standing, 50 years of age, suffering with what appeared to be the incipient stage of exophthalmic goiter, applied for medical aid. She was run down, very pale, anemic and nervous, and quite irritable, with weak, disturbed heart, increasing in rapidity; eyes slightly prominent, and a marked enlargement of the thyroid. Upon examination of the throat, the tonsils, though buried, looked suspicious, and the throat was quite sensitive, and the cervical glands slightly enlarged. I insisted that the tonsils should be removed, and she reluctantly consented. In operating, as I freed the tonsils from their pillars, the pus poured out almost as if I had opened an abscess. It is sufficient to say that following the tonsillectomy there was rapid improvement in all the patient's symptoms, and she was soon restored to health, with a rapid diminution of the thyroid enlargement. Indeed, within a few months all enlargement of the thyroid had completely disappeared. Here we had, evidently, a dominant focal infection of a primary character, and the symptoms of what appeared a thyrotoxicosis were only the result of the tonsillar infection.

Now, dismissing this phase of the subject with this illustration, let us pass on to what may be called a correlative influence of an entirely different nature:

(2) *Disordered Nervous System.*—In many cases the sympathetic nervous system often plays an important role. It may even be the dominant, causative factor in a given case of endocrine disorder. This fact has been generally accepted by many eminent physicians who, in the past, based their opinions upon the experiences of mere clinical observations. These clinical evidences, however, were often very convincing in themselves. Of late, it may be noted, we have additional proofs for the correctness of their opinions. Dr. Cannon, the Harvard physiologist, has demonstrated to his own satisfaction that the sympathetic nervous system controls the action of the medullary suprarenal gland as well as the action of the thyroid. Indeed, he has been able to artificially produce many phases of the syndrome of a hyperthyroidism, including tachycardia and a greatly increased metabolic rate, by severing the phrenic and the cervical sympathetic nerves, and joining the cut surface of the phrenic to the peripheral cut end of the cervical sympathetic. This artificial production of the syndrome of a hyperthyroidism certainly harmonizes with the view that a disordered condition of the sympathetic nervous system may often be the causative factor in the etiology of a thyrotoxicosis.

But again, let us come to our third etiological factor in the production of endocrine disorders:

(3) *Faulty Diet.*—Here, in my opinion, we

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ought to stop, spend a good deal of time, and do a good deal of careful thinking. It should be emphasized that a faulty, deficient diet is not a mere association of disordered internal secretions, but in many varied cases the dominant cause of the disordered condition. This view is not only supported by the clinical observations of many of our best practitioners and authorities, but by the recent research work of Lieutenant Colonel Robert McCarrison, who has clearly shown from his experiments in India, that certain food deficiencies, as well as a lack of sufficient nourishing food constituents—namely, the vitamins—often produce organic changes in the glands of the endocrine system. For example, iodine deficiency in our food and an excess in edible fat, resulting in free oleic acid in the digestive tract, are often productive of goiter; and again, inanition, it is claimed, produces an enlargement of the suprarenal gland with an atrophy of all the other endocrine organs of internal secretion. Indeed, malnutrition, arising from complete starvation, or such as follows a long course of feeding with a lack of vitamins, is followed with enlargement of the suprarenals, and sometimes that of the pituitary body, with atrophy of all the other endocrine structures. Now, if we could get these facts well digested and incorporated in our thinking, they would often help us out in unraveling many of the perplexing problems of the so-called multi-glandular disorders of the internal secretions.

Time will not allow me to discuss any syndrome of the diseases of the hypophysis cerebri with their varied changes in anatomical formations, or the correlative influences of the gonads upon the nervous system, as well as upon the other organs of endocrine character. It is sufficient to say that this department of study, though full of interest and information, is still imperfectly understood, needing much patient research work before we can give a satisfactory standardization of our knowledge.

In presenting this paper, I have undertaken to emphasize (1) That we have in endocrinology a field of study of the most complex nature, showing innumerable problems of every phase of correlative phenomena, and yet presenting many interesting lessons of practical importance in the diagnosis and treatment of many conditions of ill-health; (2) That we should cautiously and earnestly venture into this field of research with our eyes fully open to the difficulties before us, and with a determination that we gather the gold from the piles of dross in our efforts to serve suffering humanity; (3) That, while we patiently wait for a more perfect standardization of our knowledge of the internal secretions of our bodies in their relation to health, we must ever bear in mind that the actions of these organs, whether in health or disease, are most intimately connected with outside influences, and (4) That while we wait for a broader and more accurate knowledge in this department of science, let us remember that in the last analysis of nearly every form of endocrine disorder, the underlying causative factor in its appearance may be found in some previous disregard of one or more of the general laws of health.

Let us then teach the public how to live; how to eat and what to eat; how to work and how to rest; how to observe the moral and physical laws of health; and we shall soon find a marked diminution in the frequency of the so-called endocrine disorders.

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THE SIGNIFICANCE OF MURMURS IN THE DIAGNOSIS AND PROGNOSIS OF HEART DISEASE.*

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It is not the purpose of this paper to enter into a full discussion of the subject of heart murmurs, as such a discussion would lead us too far afield. Nor is it intended to give a didactic description of the various murmurs which we are accustomed to interpret as signifying disease of the different valves. My purpose is to discuss the significance of certain murmurs which are often wrongfully interpreted as organic murmurs, as well as the significance of the true organic murmurs.

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As a justification for this paper on an old and almost threadbare subject, I would call your attention to the large number of cardiac neurotics as a result of the perfectly sincere, but incorrect, opinion of some physician, based upon the finding, during the course of an examination for one purpose or another, of a murmur. During the last three and a half years, a considerable number of such patients have consulted me. Most of these patients have been greatly agitated as to the condition of their hearts and it has been an exceedingly difficult matter to convince them that their hearts really were not diseased, so firmly had the belief to the contrary taken root in their consciousness.

This false interpretation of heart murmurs is probably due to wrong teaching in the medical schools. As late as 1914, it was taught that mitral insufficiency was the most common valvular disease. At the present time, the best teachers of medicine hold no such view, such men as Cabot, MacKenzie, Barker, and Christian believing uncomplicated organic mitral insufficiency to be very rare. They believe the murmur formerly interpreted as meaning mitral insufficiency to be in the vast majority of instances merely a functional or accidental murmur.

As you know, there are two types of murmurs—organic and functional: organic, resulting from lesions affecting the heart valves, functional, not resulting from lesions of the valves. Many of the latter are really physiological in the sense that the hearts exhibiting them show no signs of failure during life, nor can any basis for their occurrence be found after death, by direct examination of the valves. It is not always easy to differentiate between organic and functional murmurs. As a rule, functional murmurs are soft and blowing in character, are often influenced by the phases of respiration, exercise and position, and are usually systolic in time, though these characteristics do not always distinguish them from organic murmurs. To distinguish between these murmurs, the whole circumstance of the case must be taken into consideration. When a systolic murmur is found in a robust individual with no other evidence of cardiac impairment, such as an increase in size, alteration of the heart sounds, unaccompanied by a thrill, and in whose history there can be found after careful inquiry no evidence of any infection which might predispose to disease of the cardiac structures, we may consider it as indicative neither of impairment nor of disease.

Murmurs are very frequently heard when the heart is carefully examined with the chest bare. In going over five hundred of my records I found seventy-seven, or 15.4% in which mention was made of a murmur heard in one location or another. Analysis of these records shows that murmurs were present in many conditions other than heart disease. I have constructed a chart giving the diagnosis and the location of the murmur in each case.

Diagnosis	2nd l. s.	2nd rt. s.	Apex.	Elsewhere	No. of Cases.
Epilepsy	1		2		3
Cardio-Renal	3		15	2	20
Mitral Stenosis and Mitral Regurgitation	0		5	2	5
Pleuritis	1				1
Intestinal Toxemia		1			1
Chronic Pelvic Inflammatory Disease	1				1
No Disease	2		1		3
Diabetes Mellitus	1		1	1	2
Primary Anemia	1				1
Pregnancy				1	1
Toxic Goitre	3	2	3	2	4
Pulmonary Tuberculosis			2		2
Menopause	1	1	2		2
Chronic Nephritis			1		1
Traumatic Neurosis	1				1
Paralysis Agitans	1		1		1
Deep Cervical Adenitis	1		1		1
Cholecystitis		1	1		2
Cerebrospinal Lues		1	2		2
Dilated Colon	1				1
Syphilis	1		1		2
Prostatic Hypertrophy			1		1
Secondary Anemia (Gastric Ulcer)			1		1
Patent Ductus Arteriosus	1	1	1	1	1
Aortic Insufficiency	1				1
Aortic Insufficiency and Mitral Insufficiency	3	2	3	2	3
Cardiac Neurosis	1		2		2
Appendicitis	1		1	1	1
Cholelithiasis	1		3		3
Chronic Tonsillitis	1				1
Acute Gonorrhoea			1		1
Hodgkin's Disease			1		1
Hypertension (Chronic Maxillary Sinusitis)			1		1
Carcinoma of Pancreas				1	1
Pituitary Headache	1		1		2
Total	28	9	54	13	77

Analysis of the above table teaches that, in five hundred unselected cases in seventy-seven

of which murmurs were present, the murmur was indicative of valvular disease in but nine or 11.9%; it was present at the apex in fifty-four (70%), in the second left space in twenty-eight (36% plus) elsewhere in thirteen (17% minus), in the second right space in nine (11% plus), in all of the cases except mitral stenosis and aortic insufficiency the murmur was systolic in time; all of the mitral stenosis patients had also mitral insufficiency; three of the four aortic insufficiency patients had mitral insufficiency as well; not one time was the diagnosis of mitral insufficiency alone made.

In seventy-seven patients showing cardiac murmurs, the murmur was indicative of organic disease of the valve in but nine, or 12%. Thus it would seem that we are justified in concluding that functional murmurs are much more frequent than organic murmurs. Such a murmur may be present in debilitated individuals from a variety of causes, being then but one of many symptoms which the patient may exhibit, the diagnosis of its cause necessitating a painstaking search for other evidences which may throw light upon the cause of the disability.

According to Ebstein, the heart in its normal action is governed by the five following physiological factors: "stimulus production, excitability, conductivity, contractility, and tonicity. As is the case with skeletal muscles, the heart muscle is always in a state of tonus, never relaxing entirely, even in diastole, always maintaining a certain amount of tonic contraction. Any local or general disorder which will lower the physiological function of tonus will give rise to a condition of atonia cordis. Under these circumstances the heart muscle is unable to contract forcibly during systole and is unduly relaxed during diastole. There may be even a certain amount of residual blood in the ventricles after cardiac contraction. With each impact of blood during systole, the relaxed heart and its valves vibrate, and there may be a slight regurgitation which may give rise to a systolic murmur which is best termed a functional murmur, since it is the result of some alteration in function, namely tonicity." This does not signify inherent disease of the heart, some other factor being at fault. Ebstein explains many murmurs heard on this basis.

In three of the above series, no disease could be found after careful search, and in several others by no stretch of the imagination could the heart murmur be attributed to the condition found. This is in line with the teachings of MacKenzie, who says that he has often watched patients showing heart murmurs for years without at any time finding evidence of disease of the cardiac structures.

Of twenty patients with cardiorenal disease and associated hypertension, fifteen showed systolic murmurs at the apex. Most of these hearts were decompensated but the decompensation was not due to valvular disease, rather to the disease of the myocardium or to excessive work of the myocardium in carrying on the circulation against the high pressure. In these cases the hearts are usually greatly dilated, the valve rings partaking of the dilatation. The closure of the orifices under these conditions is thus rendered impossible and a relative valvular insufficiency results. In many of these cases, as the dilatation is relieved and compensation is restored, the murmurs disappeared, indicating their origin to be muscular rather than valvular. True from a functional standpoint the same conditions are present, namely a regurgitation of blood. But if the diagnosis of organic valvular disease be made, autopsy findings will not bear us out.

In acute disorders, especially during or just after the subsidence of an acute infectious disease, it is very important to differentiate between functional and organic murmurs both from the standpoint of prognosis and as an aid in caring for the patients during convalescence. Here, as in other circumstances, a correct opinion can be formed only after due consideration of all of the evidence at our command.

Next let us consider the so-called organic murmurs. What is their significance? Organic murmurs have a varied significance, depending upon the lesions they indicate. First of all, it is important to remember that though heart murmurs are often associated with decompensation, yet the valvular lesions which they indicate are not in most instances the cause of the heart failure. Again it is well to keep in mind that individuals with true organic valvular disease due to some infectious process may lead vigorous lives and never show any signs of heart failure. Therefore, murmurs should be considered from a prognostic standpoint after attention has been paid to all of the circumstances of the case.

At times a systolic murmur is audible over the sternum at the level of the third and fourth

costal cartilages and not propagated. This murmur often means tricuspid insufficiency. This is at times a normal characteristic, John Hunter, quoted by MacKenzie, having reported years ago that a certain amount of tricuspid insufficiency is physiological in many cases, the size of the valves being insufficient to close the orifice. The significance of tricuspid insufficiency has been altogether over-rated owing to the back-pressure theory of heart failure in which the insufficiency of the tricuspid valves was looked upon as being the last stages of the decompensation. MacKenzie states that heart failure is never due to this condition alone but to disease of other valves and of the myocardium. If the case be studied carefully, it will be seen that the onset of decompensation is coincident with the onset of auricular fibrillation, which can be proven by jugular tracings where the wave due to auricular contraction will be seen to disappear, indicating the beginning of fibrillation of the auricles. True organic disease of the tricuspid valves, either as insufficiency or stenosis, is rare. Usually other valves are involved and the symptoms which result are most often due to this involvement. This murmur is mentioned not so much from the standpoint of its bearing upon the patient's health as because it is sometimes wrongfully interpreted by the examiner.

The systolic murmur heard best at the apex, indicating organic mitral insufficiency, is of little importance unless the muscle be impaired. Under these conditions the regurgitation of blood may lead to serious embarrassment of the impaired muscle, though few if any symptoms will occur until the muscle gives away. As stated above, uncomplicated organic mitral insufficiency is a relatively rare condition and was not diagnosed in a single instance reported. Relative mitral insufficiency was present in fifteen of twenty cardiorenal cases with hypertension and cardiac decompensation, though in all probability in none of these was organic disease of the mitral valve present, the regurgitation being due to dilatation of the orifices in common with dilatation of the left ventricle. It was present in all five of the mitral stenosis patients observed. From a consideration of the opinions of the leading cardiologists, it would seem that uncomplicated organic mitral insufficiency is rare and, when it does occur, is not of serious import unless the muscle be at the same time involved. If the diagnosis of organic mitral insufficiency be made, we must be sure that we are not overlooking an associated mitral stenosis. The murmur of mitral stenosis may be easily missed. It can, however, often be brought out by exercise, the assumption of a slightly stooped posture, or by a whiff of amyl nitrite.

The pre-systolic murmur of mitral stenosis has a different significance, mitral stenosis being the commonest valvular lesion with which heart failure is associated. This is readily understood when it is remembered that this lesion usually arises in scar tissue and that this cicatrizing process progresses with varying rapidity, so that prognosis is uncertain, though it is almost certain that sooner or later decompensation will occur. The interval elasping before the occurrence of this event will depend upon the rate of progress of the cicatrizing process. Again, the resistance of the valvular structures is lowered, owing to the scar tissue, and recurring attacks of low grade endocarditis are frequent. These still further compromise the competency of the valves. We should not, however, be too pessimistic in our prognosis, as mitral stenosis may be compatible with long life, with litttle or no handicap, provided the process be quiescent. But one of five cases examined had ever had a period of decompensation at the ages of twenty-nine, ninteen, fourteen, twenty-six, and forty-two years. This patient died suddenly a few months later of a probable embolus. While in the army as cardiovascular examiner, I observed several patients with well marked mitral stenotic lesions who had never been handicapped in the least, most of them having been overseas where they had done full duty and had withstood all of the attending deprivations and hardships without symptoms. It was only during routine physical examinations following influenza, that the cardiac lesions were discovered and not because of symptoms referable to the heart.

Just as the sclerotic process tends to progress in the endocardium, so it also progresses in the myocardium· which after all is the really serious aspect of this condition. The integrity of the myocardium and of the auricular ventricular bundle is interfered with and auricular fibrillation results.

From a prognostic standpoint then, we feel that mitral stenosis is a serious lesion: just how serious depends upon the rapidity of the sclerotic process in the valves and myocardium,

XUM

but especially the latter. If this be slow or non-progressive, the prognosis is relatively good: if rapid and progressive, the patient's life becomes one of great limitations.

A rough systolic murmur heard best in the first and second spaces on the right, and accompanied by a thrill, which is also heard in the great vessels of the neck usually means aortic stenosis. This condition usually occurs in elderly people in whom there is a history of syphilis. It was not observed in any of the cases reported in this paper. I saw while in the army one case exhibiting all of the classical findings of this lesion though he had never been aware of having trouble with his heart while working at his occupation as a farmer. MacKenzie states that in itself aortic stenosis rarely leads to embarrassment of the circulation, but that the aortic insufficiency, which oftener than otherwise is associated, dominates the picture.

Patients with aortic insufficiency usually come in during middle life, the sclerotic process having progressed during earlier years, thus exhausting the reserve force of the heart, the earlier symptoms of this exhaustion having been ignored. In the text-book description of the murmur indicating this lesion, it is said to be best heard in the second right space. This is true of the late cases in which the diagnosis is easily made by the concomitant symptoms, even without examination of the heart. But in the early cases, before much hypertrophy has occurred, the murmur is best heard in the second and third left spaces. It is very easily missed at this time unless we have the patient exhale deeply and hold his breath, after which the murmur is often audible when it would otherwise not be heard. Aortic insufficiency was diagnosed in four of the nine organic volvular diseases, in three of which it was accompanied by mitral insufficiency. This lesion is of somewhat serious import, its seriousness depending largely upon the condition of the heart muscle. However, when decompensation does occur, it is more serious than in any other valvular disease. This is especially true when auricular fibrillation sets in, signifying as it does grave disease of the myocardium.

On the other hand, serious disease of the heart may be present without a murmur, owing to extreme weakness of the heart muscle. As the muscle improves, a murmur may appear, if definite organic disease of the valves be present, or a murmur present may disappear as the valvular orifices contract with the better contraction of the ventricles. At times physicians say that no organic disease is present because no murmur is heard. This is a grievous error since in some of the most seriously diseased hearts no murmur may ever be heard. This is especially true in some of the hearts giving anginal symptoms. Often in these cases careful examination fails to reveal objective findings of cardiac involvement.

Summarizing, I would say that this paper finds its justification in the large number of cardiac-neurotics resulting from misinterpretation of a murmur heard over some portion of the heart. This false interpretation is probably due to the recent teachings as to the frequency of mitral insufficiency in which it was described as being the most frequent valvular lesion. That this is erroneous has been shown by the experiences of the leading cardiologists during more recent years.

A short description is given of functional and organic murmurs, and an analysis of seventy-seven patients showing murmurs at one point or another. This analysis demonstrates that organic murmurs were present in but 11.9% and functional murmurs in 88.1%: that this murmur was present at the apex in 70%, in the second left space in 36%, elsewhere in 17%, and in the second right space in 11%. All of the functional murmurs were systolic in time.

A basis is given for certain of the functional murmurs which are heard in debiltating conditions.

In fifteen of twenty cardiorenal patients with hypertension, systolic murmurs were present at the apex, but the opinion is expressed that the decompensation is due to muscle failure rather than to any valvular disease.

The significance of certain of the organic valvular lesions is given with reasons for the varying prognoses.

Serious heart impairment may be present without the presence of a murmur.

Concluding, it may be said that organic murmurs have a varying significance, to arrive at which we must determine as far as possible whether the damage done by the disease process is stationary or progressive, and whether the disease has affected and impaired the heart muscle as well: whether the disease of the valve is such as to obstruct the work of the

heart and to impair the efficiency of the muscle.

The field of cardiac response to effort is the only true and safe guide, being as it is an indication of muscle efficiency. Decompensation, when it does occur, is the result of muscle weakness rather than of valvular disease. As MacKenzie has so well put it "The presence of a murmur has so oppressed the profession that a vast amount of harm is continually being done patients by an imperfect understanding of the prognostic significance of this sign."

To make a correct diagnosis and prognosis, we must not be biased by any one abnormal sign but must take into consideration, after careful observation, every sign and accompanying circumstance before arriving at final conclusions.

Thirty-first Street and West Avenue.

OBSTETRICS IN LITERATURE.

By M. PIERCE RUCKER, M. D., Richmond, Va.

Madame President and Ladies of the Happy Valley Current Events Club:

I feel greatly complimented that you should have asked me to address your club upon some matters pertaining to Obstetrics, but I find myself greatly embarrassed for two reasons. In the first place, many of you know a great deal more, at least subjectively, about obstetrics than I can ever hope to know, and in the second place, until recently, it has not been customary to discuss my specialty in public except in medical meetings. The result is that there has not been sufficient time to develop a phraseology altogether suitable for such a gathering as this. I am still further handicapped because I have thought and dreamed so much about obstetrics that I fear I have become a poor judge of what is proper to discuss before such an audience. To be perfectly safe, and certain of not giving offense, I have decided to confine my remarks to those cases of obstetrics that are to be found described in the best English Literature, quoting verbatim, and adding only such notes as may be necessary to emphasize the obstetric aspect of the case.

I wish to direct your attention first to the thirty-fifth chapter of Genesis, sixteenth to nineteenth verses. "And they journeyed from Bethel; and there was but a little way to come to Ephrath: and Rachel travailed, and she had hard labour. And it came to pass, when she was in hard labour, that the midwife said unto her, Fear not; thou shalt have this son also. And it came to pass, as her soul was in departing, (for she died) that she called his name Ben-oni; but his father called him Benjamin." Here we have the earliest description of labour, if we except that of the birth of Eve, which according to Sir James Y. Simpson is the only case of male parturition that has ever occurred. It is said that when Sir James Y. Simpson was taken to task for his introduction of ether and chloroform into obstetrics he replied that, when the Lord took Eve out of Adam's side, He put him in a deep sleep. But to get back to Rachel's case, you are struck at once with the beautiful description. There is not an unnecessary word. The whole picture stands out before you, the midwife encouraging the patient, telling her it will be a boy, the patient worn out and exhausted with suffering, convinced that she is going to die, and with her dying breath naming the child Ben-oni, which means "the son of my sorrow," and finally, the arrogance of the father who says that the suffering was of no consequence, "I will change his name to Benjamin."

When a medical mind is confronted with such a catastrophe, the first concern is to ascertain the cause. Among the usual causes for death during labour or immediately after it—pulmonary embolism, edema of the lungs, eclampsia, hemorrhage, and rupture of the birth canal—the latter is the only one that needs be considered. Evidently there was neither hemorrhage nor convulsions. The patient conversed to the very end, and there seemed to be no marked dyspnoea as you would expect had there been any pulmonary complication. On the other hand, the patient should have been in excellent physical condition, having led an active outdoor life from early childhood, and at the time she was taken in labour she was engaged in a journey that required a certain amount of physical fitness. At her previous delivery, no mention is made of any difficulty. The chances are that an over-size child or a mal-position was the cause of the dystocia. Such cases were formerly ascribed to shock, but a careful autopsy usually reveals a rupture somewhere in the birth canal.

For the second case let us turn to that ancient historian, Flavius Josephus. In the ninth chapter of the second book of the "Antiquities of the Jews," it is related how the King of Egypt was greatly perturbed by a prophecy of one of the sacred scribes, to the effect "that

XUM

about this time (1616 B. C.) a child would be born to the Israelites; who, if he was reared, would bring the Egyptian dominion low, and would raise the Israelites; that he would excel all men in virtue, and obtain a glory that would be remembered through all ages." The King, therefore, commanded that every male child born to the Israelites should be cast into the river and destroyed and, to enforce this order, he appointed Egyptian midwives to watch the labours of the Hebrew women. About the same time a vision came to "Amram, one of the nobler sort of the Hebrews" that the child of whom the King was afraid would be born to him. "When the vision had informed him of these things, Amram awakened and told it to Jochebed, his wife; and now the fear increased upon them, on account of the prediction in Amram's dream, for they were under concern, not only for the child, but on account of the happiness that was to come to them also. However, the mother's labour was such as afforded a confirmation to what was foretold by God: for it was not known to those who watched her by the easiness of her pains, and because the throes of her delivery did not fall upon her with violence; and now they nursed the child at home privately for three months. But after that time, Amram fearing he should be discovered," etc. Then follows the famous episode of Moses in the bulrushes. How different is this case from the preceding one! There are two features that stand out. One is the ease of the labor, so easy that the midwives who were appointed to spy upon the labors of the Hebrew women were deceived. The second is that the baby was so quiet and well behaved that he could be concealed about the home for three months. To the Hebrew parents it appeared to be an especial dispensation from God in order that Moses might be reared to outwit the Egyptions. We now know that both of these features, the easy labour and the good baby, are interdependent one upon the other. The easy labor precludes damage to the head, and an undamaged brain insures a quiet contented child so long as he is well fed. Thus 1,600 years before Christ, Jehovah, when he wanted a leader for Israel, used the very ideals that we strive to obtain in our modern obstetrics.

For our next case let us turn to primitive Britain. In King Arthur's time the people were just emerging from a state of savagery, "White Indians," Mark Twain called them. Their castles, while often large and imposing, were little more than window-pane-less fortifications. Their furniture was chiefly banquet boards and benches, nothing but a hardy race could have lived in such places. The birth of Tristram is related in the first chapter of the eighth book of Malory's LeMorte D'Arthur as follows: "When Elizabeth, King Meliodas' wife, missed her lord, and she was nigh out of her wit, and also as great with child (her first) as she was, she took a gentlewoman with her, and ran into the forest to seek her lord. And when she was far in the forest she might no further, for she began to travail fast of her child. And she had many grimly throes: her gentlewoman helped her all that she might, and so by miracle of Our Lady of Heaven she was delivered with great pains. But she had taken such cold for the default of help that deep draughts of death took her, that needs she must die and depart out of this world, there was none other bote. And when this Queen Elizabeth saw that there was none other bote, then she made great dole."

It is hardly probable that the "cold" was the cause of death. The untrained gentlewoman was likely misled by the post partum chill that often occurs at this stage and has no significance. The description is not accurate enough for us to hazard even a guess as to the immediate cause of the death. It was attended by great "dole," and might have been pulmonary embolism or edema. Tennyson throws no further light upon this subject. The only reference to parturition that I have been able to find in his work is that which appears to have been a post-mortem delivery, when Vivian says:

"My father died in battle against the King
My mother on his corpse in open field;
She bore me there, for born from death was I
Among the dead and sown upon the wind."

Southey reports another case of primitive obstetrics in his Tale of Paraguary, canto 1:27. The entire tribe with the exception of Quiara and Monnema had been destroyed by smallpox. The pair fled into the swamp and made their abode beside the sluggish Mondai.

"The Moon had gathered oft her monthly store
Of light, and oft in darkness left the sky,
Since Monnema a growing burden bore
Of life and hope. The appointed weeks go by;
And now her hour is come, and none is nigh
To help: but human help she needed none.

A few short throes endured with scarce a cry,
Upon the bank she laid her newborn son,
Then slid into the stream, and bathed, and all was done."

The bath may have been natural or poetic under the circumstances, but was probably responsible for a saprophytic infection. For it is related that it was five years before another child was born although they continued to live in primal happiness. Quiara, the husband, had to forego the customary *couvade*, because there was no one else to supply the family with food.

While we are on the subject of poets, it is interesting to note that Lord Byron suffered from an intercranial hemorrhage received at birth. At least, this is the opinion of the eminent London pediatricians, Cameron and Osman. Unfortunately, I can find no account of his birth, other than that he was the first child.

Our fifth case is found in modern history. It is to be regretted that the births of very few great men are described. William Mulligan Sloane in his Life of Napoleon Bonaparte gives some account of the birth of that genius. The great Napoleon was the fourth child. The first child, a boy, died in infancy: the second, a girl, died in infancy; the third, a son, survived; and the fourth was Napoleon. "There is a myth that his mother was taken in labor while at Mass and reached her chamber just in time to deposit, on a piece of embroidery representing the young Achilles, the prodigy, bursting so impetuously into the world." The piece of embroidery is probably a concession to the widespread belief in maternal impression, but the ease of his delivery is supported by his subsequent career.

I was surprised not to find more cases of tuberculosis and pregnancy. It is not an uncommon occurrence, and offers such dramatic possibilities. The Professor at the Breakfast Table gives a poetical description of what is probably such a case, when he describes the death of the Latin Tutor's wife. (The subsequent career of the tutor certainly supports such an assumption). "The poor lady, seated with her companion at the chess-board of matrimony, had but just pushed forward her little white pawn upon an empty square, when the Black Knight, that cares nothing for castles, or Kings, or Queens, swooped down upon her and swept her from the larger board of life."

For our seventh case let us turn to fiction, portraying as it does conditions and customs more truly than does history. Shortly after David Copperfield's mother had been "conveyed upstairs to her own room with all speed," the doctor and the nurse arrived and found the austere aunt in the parlor. But let David Copperfield himself tell it. "Those allied powers were considerably astonished, when they arrived within a few moments of each other, to find an unknown lady of portentous appearance sitting before the fire, with her bonnet tied over her left arm, stopping her ears with jeweller's cotton. Peggotty, knowing nothing about her, and my mother saying nothing about her, she was quite a mystery in the parlor; and the fact of her having a magazine of jeweller's cotton in her pocket, and sticking the article in her ears in that way, did not detract from the solemnity of her presence."

"The doctor having been upstairs and come down again, and having satisfied himself, I suppose, that there was a probability of this unknown lady and himself having to sit there, face to face, for some hours, laid himself out to be polite and social. He was the meekest of his sex, the mildest of little men. He sidled in and out of a room, to take up the less space. He walked as softly as the Ghost in Hamlet, and more slowly. He carried his head on one side, partly in modest depreciation of himself, partly in modest propitiation of everybody else. It is nothing to say that he hadn't a word to throw at a dog. He couldn't have *thrown* a word at a mean dog. He might have offered him one gently, or half a one or a fragment of one; for he spoke as slowly as he walked; but he wouldn't have been rude to him, and he couldn't have been quick with him, for any earthly consideration."

"Mr. Chillip, looking mildly at my aunt with his head on one side, and making her a little bow, said, in allusion to the jeweller's cotton, as he softly touched his left ear: 'Some local irritation Ma'am?'

"'What!' replied my aunt, pulling the cotton out of one ear like a cork.

"Mr. Chillip was so alarmed by her abruptness—as he told my mother afterwards—that it was a mercy he didn't lose his presence of mind. But he repeated sweetly:

"'Some local irritation ma'am?'

"'Nonsense!' replied my aunt, and corked

herself again, at one blow.

"Mr. Chillip could do nothing after this, but sit and look at her feebly, as she sat and looked at the fire, until he was called upstairs again. After some quarter of an hour's absence, he returned.

"'Well?' said my aunt, taking the cotton out of the ear nearest to him.

"'Well, ma'am;' returned Mr. Chillip, 'we are progressing slowly ma'am.'

"'Ba-a-ah!' said my aunt, with a perfect shake on the contemptous interjection, and corked herself as before.

"Really—really—as Mr. Chillip told my mother, he was almost shocked; speaking in a professional point of view alone he was almost shocked. But he sat and looked at her notwithstanding, for nearly two hours, as she sat looking at the fire, until he was again called out. After another absence, he again returned.

"'Well?' said my aunt, taking out the cotton on that side again.

"'Well, ma'am,' returned Mr. Chillip, 'We are—we are progressing slowly ma'am.'

"'Ya-a-ah!' said my aunt. With such a snarl at him, that Mr. Chillip absolutely could not bear it. It was really calculated to break his spirit, he said afterwards. He preferred to go and sit upon the stairs in the dark and strong draught, until he was again sent for."

"Ham Peggotty, who went to the national school, and was a very dragon at his catechism, and who, therefore, may be regarded as a credible witness, reported next day, that happening to peep in at the parlor door an hour after this, he was instantly described by Miss Betsy, then walking to and fro in a state of agitation, and pounced upon before he could make his escape. That there were now occasional sounds of feet and voices overhead which he inferred the cotton did not exclude, from the circumstances of his evidently being clutched by the lady as a victim on whom to expend her superabundant agitation when the sounds were loudest. That, marching him constantly up and down by the collar (as if he had been taking too much laudanum), she, at those times, shook him, rumpled his hair, made light of his linen, stopped *his* ears as if she confounded them with her own, and otherwise tousled and maltreated him. This was in part confirmed by his aunt, who saw him at half-past twelve o'clock, soon after his release, and affirmed that he was then as red as I was."

"The mild Mr. Chillip could not bear malice at such a time, if at any time. He sidled into the parlor as soon as he was at liberty, and said to my aunt in his meekest manner:

"'Well, ma'am, I'm happy to congratulate you.'"

* * * * *

"I was born on a Friday at twelve o'clock at night. It was remarked that the clock began to strike, and I began to cry, simultaneously. In consideration of the day and hour of my birth, it was declared by the nurse, and by some sage women in the neighborhood that had taken a lively interest in me several months before there was any possibility of our becoming personally acquainted, first that I was destined to be unlucky in life, and secondly, that I was privileged to see ghosts and spirits."

"I was born with a caul, which was advertised for sale, in the newspapers, at the low price of fifteen guineas. Whether seagoing people were short of money at that time, or were short of faith and preferred cork jackets, I don't know;" but "ten years afterwards the caul was put up in a raffle down in our part of the country, to fifty members at half-a-crown a head, the winner to spend five shillings. I was present myself, and I remember to have felt quite uncomfortable and confused, at part of myself being disposed of in that way."

I have quoted rather extensively from the autobiography of David Copperfield not only because it is interesting to know that he was born without rupturing the membranes, but chiefly because the account illustrates so well, many of the customs and superstitions connected with child-bearing.

I fear I weary you with these cases but I can not refrain from citing, in conclusion, one more case, done in the best rococo English. Bear with me just a few moments while I quote from the first chapter of Oliver Twist. "Among the other public buildings in a certain town, which for many reasons it will be prudent to refrain from mentioning, and to which I will assign no fictitious name, there is one anciently common to most towns, great or small: to wit, a workhouse; and in this workhouse was born, on a day and date which I need not trouble myself to repeat, inasmuch as it can be of no possible consequence to the reader, in this state of the business at all events, the item of mor-

tality whose name is prefixed at the head of this chapter.

"For a long time after it was ushered into this world of sorrow and trouble, by the parish surgeon, it remained a matter of considerable doubt whether the child would survive to bear any name at all; in which case it is somewhat more than probable that these memoirs would never have appeared; or if they had, that being comprised with a couple of pages, they would have possessed the inestimable merit of being the most concise and faithful specimen of biography extant in the literature of any age or country.

"Although I am not disposed to maintain that the being born in a workhouse, is in itself the most fortunate and enviable circumstance that can possibly befall a human being, I do mean to say that in this particular instance, it was the best thing for Oliver Twist that could by any possibility have occurred. The fact is, that there was considerable difficulty in inducing Oliver to take upon himself the office of respiration, a troublesome practice, but one which custom has rendered necessary to our easy existence; and for some time he lay gasping on a little flock mattress, rather unequally poised between this world and the next: the balance being decidedly in favor of the latter. Now, if during this period, Oliver had been surrounded by careful grandmothers, anxious aunts, experienced nurses, and doctors of profound wisdom, he would most inevitably and indubitably have been killed in no time. There being nobody by, however, but a pauper old woman, who was rendered rather misty by an unwonted allowance of beer; and a parish surgeon who did such matters by contract; Oliver and nature fought out the point between them. The result was, that, after a few struggles, Oliver breathed, sneezed, and proceeded to advertise to the inmates of the workhouse the fact of a new burden having been imposed upon the parish, by setting up as loud a cry as could reasonably have been expected from a male infant who had not been possessed of that very useful appendage, a voice, for a much longer space of time than three minutes and a quarter.

"As Oliver gave this first proof of the free and proper action of his lungs, the patchwork coverlet which was carelessly flung over the iron bedstead, rustled; the pale face of a young woman was raised feebly from the pillow; and a faint voice imperfectly articulated the words, 'Let me see the child, and die.'

"The surgeon had been sitting with his face turned towards the fire; giving the palms of his hands a warm and rub alternately. As the young woman spoke, he rose, and advancing to the bed's head, said with more kindness than might have been expected of him:

"'Oh, you must not talk about dying yet.'

"'Lor bless her dear heart, no!' interposed the nurse, hastily depositing in her pocket a green glass bottle, the contents of which she had been tasting in a corner with evident satisfaction. 'Lor bless her dear heart, when she has lived as long as I have, sir, and had thirteen children of her own, and all of them dead except two, and them in the wurkus with me, she'll know better than take on that way, bless her dear heart! Think what it is to be a mother, there's a dear young lamb, do.'

"Apparently this consolatory prospective of a mother's prospects failed in producing its due effect. The patient shook her head, and stretched out her hand toward the child. The surgeon deposited it in her arm. She imprinted her cold white lips passionately on its forehead; passed her hands over her face: gazed wildly around; shuddered; fell back and died. They chafed her breast, hands and temples; but the blood had stopped forever."

Dickens' shrewd comment upon the methods of handling asphyxiated babies is worthy of emphasis. Nothing is told of the mother except that she was unmarried, and had been found on the street the night before, poorly clad, cold and exhausted. One of any number of things may have been the cause of her death. I do not see how you can rule out pneumonia. A great number of women lost their lives in just this way in the great "flu" epidemic.

In conclusion, I wish to say that while the maternal results in this series are not flattering, there being a mortality of fifty per cent, yet the results from the standpoint of the infants is all that could be wished for. The great fame to which at least two of the babies attained, in the eyes of some at least, more than compensates for the loss of the four mothers.

DISCUSSION.

Question. (By the President). Does not Shakespeare give some instance of this kind?

Answer. The great Bard of Avon does not report a single case. That he was familiar with the signs and symptoms of pregnancy and its surgical treat-

ment is shown by a number of extremely apt references. He speaks, for instance, of the compensatory rearing of the shoulders and head incident to the disturbance of the center of gravity when the patient is on her feet, as the "pride of pregnancy" and as you know Macduff was "from his mother's womb untimely ripped."

Medical Arts Building.

THE TREATMENT OF THE TOXEMIAS OF PREGNANCY.*

By GREER BAUGHMAN, M. D., F. A. C. S., Richmond, Va. Professor of Obstetrics, Medical College of Virginia; Visiting Obstetrician, Stuart Circle, Memorial, St. Philip Hospitals.

The toxemias of pregnancy are the most serious complications that the pregnant woman faces. In 1920, I gathered together the statistics from the obstetrical service of the Medical College of Virginia and found that we had nineteen deaths in 2,341 deliveries. Seven of the deaths were due to toxemia, two to sepsis, two to pulmonary tuberculosis, one to miliary tuberculosis, two to lobar pneumonia, one to decompensated heart, one to intestinal obstruction, and one to embolus. In our clinic nearly half of the deaths are due to the toxemias.

If we could prevent the toxemias our death rate for the pregnant woman would be reduced about one-half.

The question of prevention is tremendously important but will not be discussed in this paper. Frequent contact with the prospective mother, giving thoughtful attention to her complaints, using the average amount of medical knowledge in correcting her tendencies, and taking her freely into our confidence when we have found any suspicious symptoms, will generally get good results.

We will confine our attention to the discussion of the treatment of vomiting of pregnancy, pre-eclampsia, eclampsia and nephritis in pregnant women.

Vomiting of Pregnancy

To my mind the vomiting of pregnancy may be divided into two sorts—the mild and the severe. Toxemia is the background of all; in most cases we have a neurotic element and in a few a reflex cause is added.

I call the case mild as long as acetone and diacetic acid is absent from the urine.

When she is vomiting everything including water, and has acetone and diacetic acid in her urine, I call it severe. When she adds to this a jaundice and we find bile in the urine along with albumen and casts, I regard her as seriously ill, aiming straight for an abortion or death, unless we can stop her in a very few days.

I take ptyalism, certainly nausea and vomiting seriously, and instruct my women to report to me when these things occur. In the mild cases they are instructed to abstain from sexual intercourse, to relieve their constipation with alkalies, milk of magnesia is my favorite, lie down after eating, with an ice bag on the upper abdomen, and to take solid, carbohydrate foods every three or four hours instead of going to the table. They are carefully examined to replace a retrodisplaced uterus and also to eliminate appendicitis, ulcer of the stomach, and many other things that might cause nausea. These are the cases that receive intravenous injections of lutein, the action of which seems to me to be more psychic than real. If they do not improve, I give them an intravenous injection of twenty per cent glucose solution. My attention was called to the injections of large doses of twenty per cent glucose intravenously, by an article by Paul Titus, M. H. Givens and George L. Hoffman in the J. A. M. A., 1920.

When the woman is vomiting a large mass of food and water, when acetone and diacetic acid appear in her urine, I send her to the hospital, keep the family away, starve her for twenty-four hours, get blood for blood sugar estimation, inject through the same needle 250-350 cc. twenty per cent glucose solution, give her five per cent glucose and bicarbonate solution by bowel, after the bowels have been well emptied by an enema. The proctoclysis is repeated every eight hours and the twenty per cent glucose repeated intravenously every twenty-four hours until she is definitely improved. After twenty-four hours of starvation, she is given crackers, toast, cakes, peppermint candy, beaten biscuits, every three hours, with a small quantity of water as a reward. You know you can throw up water easier than you can solids. The cases that respond quickly to this line of treatment are those that start with low blood sugar.

If after a thorough trial of this method she still vomits, acetone and diacetic acid still persist in her urine, casts have not disappeared and albumen can still be found, we abort her.

The average of blood sugar in this series of vomiters was 95, the highest 114, the lowest 76.

*Read before the Norfolk County Medical Society, Norfolk, Va., January 28, 1924.

Pre-eclampsia

Our experience has been that as long as a woman remains pre-eclamptic she has about the same chance of recovery as a normal pregnant woman. The moment she has a convulsion or becomes comatose her chance of death is one in five. Manifestly, it is of the utmost importance that the woman be kept from having convulsions or coma.

A very large number of pre-eclamptics can be saved from convulsions and coma by intelligent treatment. In my private work I have had a large number of pre-eclamptics but only two have had convulsions. The record of our dispensary is almost as good.

Virginia is in a high blood pressure zone, as shown by life insurance statistics compiled by Dr. J. Allison Hodges. Among 2,341 clinical cases, I found an incidence of 2.2 per cent of convulsions. A very few of these had had previous dispensary treatment. Seventy per cent of private and dispensary cases show sometime during their visits albumen, casts or sudden rise of blood pressure.

The first sign of malaise, headache, oedema, blurred vision, vomiting late in pregnancy, rising blood pressure, albumen or casts in the urine, demands an immediate careful examination to find the underlying cause. If none can be found we assume that the case is one of pre-eclampsia or nephritis and put her immediately upon treatment.

The diet is reduced to milk and bread, she is put to bed and given cream of tartar lemonade, one drachm of cream of tartar to the pint, and is directed to take digitalis in some form. If her condition does not improve very promptly, a blood chemistry is done and through the same needle 200 to 300 cc. of a twenty per cent glucose solution is run into her vein.

If her blood pressure is in the neighborhood of 180/100 we withdraw 200 or 300 cc. of blood before injecting the glucose, more for the purpose of removing the poison than reducing the blood pressure. The digitalis is continued until the physiological effect is reached, her diet is reduced to cream of tartar lemonade. If she is very oedematous, she is sweated with a hot pack or electric blanket. If she does not improve, labor is induced.

The labor is guarded with a sufficient amount of morphine to make her comfortable. She is delivered under a gas-oxygen anesthesia. We try not to give morphine within two hours of her delivery because of the baby.

The plan as outlined above is also used for the cases of nephritis that have not gone to convulsions.

Eclampsia and Nephritis, With Convulsions

The plan for treatment of convulsions is the same whether we believe the case is primarily of liver or of kidney origin. If she has marked demonstrable retinal changes, and if she continues to show albumen and casts in her urine long after she has recovered, we consider that she is a nephritic. But at the time of the acute illness we do not care what the primary pathology is. One of the objects is to keep her alive long enough to make our differential diagnosis.

The plan that has served us best is the Dublin method, slightly modified, and may be summarized as follows:

1. Give morphine sulphate, at least one-half grain, by hypo.
2. The morphine is repeated in smaller doses, if she continues to have convulsions, until the respirations are ten. Sulphate of atropine, grains 1/150, is added to the morphine when there is much frothing at the mouth or rales.
3. She is put into a room by herself and watched continuously.
4. She is kept on her side to prevent the aspiration of mucus and, in the event of a convulsion, is pulled over the side of the bed so that her head is lower than her body and there is no chance of aspirating mucus.
5. Digitalis in some form is used until patient is digitalized.
6. A mouth gag is used to prevent the biting of the tongue.
7. Artificial respiration and oxygen are adminstered after the attack, if necessary.
8. A high colonic irrigation first with soap suds, then five per cent glucose and soda bicarbonate is used. This is repeated every eight hours.
9. If the patient has recently eaten, she is given a gastric lavage and two ounces of the magnesium sulphate concentrated is left in the stomach.
10. Withdraw 200 cc. or more of blood, depending upon the blood pressure, size of the patient, and through the same needle inject 200 to 300 cc. of twenty per cent glucose solu-

XUM

tion. This solution should be sterile and fresh made.

11. If patient is doing badly, if the convulsions are increasing, both in number and severity, if the lungs are becoming more oedematous, then we deliver in the way that will cause the least shock to the mother.

12. After she has recovered sufficiently to swallow, we give cream of tartar lemonade freely.

13. We do not give food until the patient has begged for it. Begin with sweet milk. These patients do very well on cream of tartar lemonade for three or four days at a time.

Severe Nausea and Vomiting of Pregnancy Associated With Diacetic Acid and Acetone in the Urine

General treatment of all cases.—Fractional feeding particularly of carbohydrates, alkalies by mouth and bowel; relief of constipation; rest after eating with ice bag to gastric region; replacement of retroverted uteri, in some cases the use of a pessary, and in all such cases the demonstration of the knee-chest position.

I

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
9	4	3	2

II

Injections of Lutein in addition to the treatment outlined in No. I.

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
9	8	0	1

III

Nausea complicating Pyelitis of Pregnancy treated as No. II.

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
3	0	3	0

IV

Nausea complicating diseased tonsils treated as No. II.

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
1	1	0	0

V

Intravenous injection of 20% glucose solution in addition to treatment as outlined above in No. I.

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
11	10	0	1

VI

Nausea complicating Pyelitis of Pregnancy treated as No. V.

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
3	1	2	0

VII

Nausea complicating Nephritis treated as No. V.

No. Cases	Recovery without Abortion	Abortion	Accidental Abortion
2	1	1	0

Cases Treated With Large Doses of Glucose, Morphine, Digitalis

	No.	Moribund	Died	Babies Died
Pre-eclampsia	9	0	0	0
Nephritis	8	1	1 (12.5%)	3 (37.5%)
Eclampsia	22	4	6 (27.2%)	8 (36.3%)
Post-Delivery Eclampsia	3	0	1 (33.3%)	1 (33.3%)
Total	42	5(12.8%)	8 (19%)	12 (26.6%)

There were three pairs of twins.
Death rate of those having convulsions 24.2%

Operations

	No.	Voorhees Bag	Bag and Version	Forceps	Caesarean Section
Pre-eclampsia	9	0	2	1	1
Nephritis	8	3	2	1	0
Eclampsia	22	2	5	4	2
Post-Delivery Eclampsia	3	0	0	0	0

Caesarean Sections.—The pre-eclamptic was a primipara with central placenta previa. One eclamptic was moribund, operated under local to save baby; one eclamptic was a primipara

with twins, not in labor and doing badly. All were saved.

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ALBUMINURIA IN RELATION TO DISEASE OF THE TONSILS.

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It is quite commonly conceded by physicians that albuminuria may occur in almost any acute disease, especially in the exanthematous fevers of childhood. Even frank nephritis is not an unusual complication of acute infections; in fact, it occurs quite frequently after scarlatina, diphtheria and other diseases. However, physicians have not, as a rule, given general recognition to the possibility of renal changes in nasopharyngeal infection, especially tonsillitis. In 1910, H. W. Loeb[1] directed special attention to the fact that acute nephritis is a frequent sequel of tonsillitis, although this is often overlooked by the majority of practitioners. He made a very careful study of the available literature at that time, recording Leyden's observation (1891) of the possibility of nephritis after angina, and Thouvenet's reported case (1894), of marked albuminuria, ten days after the onset of acute lacunar tonsillitis. John Lovett Morse, Emil Mayer, Herrick, Friedrich, Mueller, Curschmann and numerous other authors had recognized the occurrence of nephritis after simple acute tonsillitis. Adler[2] had even recorded the statement that a form of nephritis occurs in at least seventy-five per cent of all cases of pure tonsillitis.

With the inauguration of the intensive studies of focal infection in relation to systemic disorders, the tonsils soon became the object of almost universal suspicion as probably the most common avenue of infection. Frank Billings[3] recognized clearly the etiologic relation of nasopharyngeal infections to arthritis and nephritis. This subject has been emphasized also by Shambaugh,[4] who stressed particularly the possibility that tonsil stumps, however small, may be productive of nephritis and rheumatism.

To illustrate the frequent correlation between tonsillar infection and nephritis, Loeb cited four cases, all involving physicians and members of their families. In each instance, diphtheria and scarlet fever were definitely excluded as the cause of the hemorrhagic nephritis, which was not discovered until the disappearance of mild tonsillar inflammation with an unusually slow course. This late renal affection differed markedly from the nephritis of scarlatina and diphtheria, in which the physical signs and the symptoms of nephritis are most apparent at the height of the acute infectious disease. If the tonsillar inflammation had not been observed, Loeb's cases would have been diagnosed as spontaneous or idiopathic nephritis. Smith and Bailey[5] have recently reported three cases that demonstrate the close relationship between tonsillar and renal infections. In the presence of chronic disease of the tonsils with acute nephritis or pyelonephritis, they recommend immediate tonsillect-

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omy for the purpose of preventing permanent organic injury. Cautley[6] has cited two cases. One of his patients was observed for almost three years, after decapsulation of one kidney had been performed because of persistent albuminuria, anasarca and ascites. Subsequent transitory improvement was ascribed to the operation, but recurrence took place, with edema of the legs and massive albuminuria. This "flare-up" was ascribed to septic tonsils. Within a month after enucleation of the tonsils the albuminuria disappeared and the patient subsequently enjoyed good health.

Having ample facilities and assistance in our clinic at the National Soldiers' Home, we have fortunately had the benefit of careful laboratory studies, including urinalysis, in every case of tonsillitis, in adults as well as in children. Immediately after an attack of acute tonsillitis, albumin was found in over forty per cent of our cases, albumin and pus cells in more than twenty-five per cent, and albumin, pus cells and casts in over five per cent. In the last class of cases there was always a history of more than one previous attack. If tests for albuminuria or for evidences of hematuria were made systematically by laryngologists in every case of tonsillar infection, it is more than probable that Adler's statement that renal damage occurs in seventy-five per cent of all cases will not prove an exaggeration.

The Silent Tonsil.

The mere presence of the tonsils may often be considered a determining cause of renal involvement in nasopharyngeal infection. Because of their general structure, their crypts and recesses, the tonsils offer an excellent refuge for pathogenic micro-organisms. Undoubtedly the tonsillar and other lymphoid tissue of the pharynx plays a defensive role against local and general infection, but it has been definitely proved also that it serves as a portal of entry for systemic invasion by virulent bacteria. The etiologic relationship of the tonsils to renal disease, including nephritis and pyelonephritis, need not necessarily be evidenced by tonsillar hypertrophy. If diseased, any tonsil or tonsillar remnant, no matter how small, may provoke systemic complications that lead to renal changes. In the final analysis, the kidneys are primarily excretory organs, serving as filters for inorganic salts as well as organic detritus, including bacterial products.

In a further study of the material at our clinic, I shall purposely omit consideration of all cases of acute tonsillitis. Instead, I shall limit the analysis to cases in which there have been no severe attacks of tonsillitis, the patients having a septic appearance and complaining of stiffness of the neck during deglutition and of a general run-down condition, or "loss of pep," as the soldiers term it. Inspection of the pharynx discloses that the anterior pillar is darker in color than the other pharyngeal structures and is firmly adherent to the tonsil. The surface of the tonsil is more or less smooth, the crypt mouths being very small and difficult to locate. The crypts contain considerable retained secretion under pressure. The tonsil is light in color, for its surface is bathed in a white filmy substance like very thick saliva. To such a tonsil I propose to assign the name of "the silent tonsil." In the presence of this tonsillar finding, experience has demonstrated that we can confidently anticipate discovering albuminuria.

Although ether anesthesia was used in most of our operations, procain (0.25 per cent), being employed only rarely, the albuminuria was not attributable to the ether narcosis. The theory that the albuminuria after tonsillectomy is due to the irritant effect of ether on the kidneys is not tenable in the face of the results of numerous urinalyses. K. R. Ruddell and Scott Edwards[7] have reported that albuminuria was found quite as frequently after tonsillectomy under local anesthesia. They attributed the postoperative urinary condition to the fact that some, perhaps much, infective material is expressed from the tonsils during the operation and enters the general circulation. On the other hand, preoperative albuminuria usually clears up after a few days' rest in bed, and in these cases the renal disturbance after tonsillectomy proves less severe.

From January to September, 1923, we observed nine cases of "the silent tonsil." Every case has therefore been under observation for at least five months. The patients included six men, aged 19 to 48 years, two women, aged 29 and 44 years, respectively, and one boy, 11 years old. Examination of the urine disclosed pus cells in four cases, erythrocytes and pus

6. Cautley, E.: The Kidneys and Tonsillar Infection. Arch. Pediat., 40:84-87, Feb., 1923.

7. Ruddell, K. R.; Postoperative Nephritis. J. Indiana M. Assn., 11:6, January, 1918.

cells in three cases, and casts in one case. In each case, the general preoperative procedure was almost identical.

The patient was kept in bed for from two to five days, on a light diet with plenty of water and other fluids. On the day of the operation, thirty minutes before administration of the ether (in two cases, local anesthesia with procain was employed), the patient received a hypodermic injection of morphin, 1/8 to 1/4 grain, with atropin 1/150 grain. The child received 1/16 grain morphin. The tonsils were enucleated without undue haste, extreme care being exercised to remove every vestige of the tonsils, including the subtonsillar tissue, and all adenoid vegetations. After the operation the patient was kept in bed for from three to ten days. During this time the urine was examined daily, and an able internist co-operated in attending to the cases. The albuminuria disappeared completely in from five to fifty-one days—the longest period being in the case with casts—and repeated examinations in every case have failed to disclose recurrence of the urinary symptoms. So far as general physical improvement and cure of albuminuria are concerned, the results have been perfect in all patients except one woman with goiter, in whom increasing thyroid enlargement has necessitated another operation.

Conclusions.

1. Routine tests will disclose the presence of albuminuria or other evidences of nephritis in the majority of cases of acute tonsillitis or other tonsillar infections.

2. In cases of albuminuria of doubtful origin, careful examination of the pharynx may often determine the etiologic relationship of diseased tonsils.

3. Hypertrophy or severe inflammation of the tonsils is not necessarily an index of the etiologic relationship of the pharyngeal lymphoid tissue to renal involvement. Even small tonsils or a mild attack of tonsillitis may provoke marked nephritis.

4. Thorough enucleation of the tonsils, including the subtonsillar tissue and adenoid vegetations, assures the prompt cure and prevents the recurrence of the related albuminuria.

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SOME REMARKS ON THE SECTIONAL METHOD OF STUDYING AND TEACHING MACROSCOPIC ANATOMY.

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In considering the sectional method of studying and teaching macroscopic anatomy, it is a propos to touch upon its history and development.

The sectional method of studying macroscopic anatomy is by no means of recent date. There is abundant evidence that as early as the first part of the sixteenth century it was used, though to a very limited extent, with the customary dissection method. Leonardo da Vinci, living at that time, pictured median sagittal sections of bodies of both male and female. In the seventeenth century quite a number of anatomists gave illustrations of sections of various parts of the body; among them may be mentioned the great Belgian anatomist Vesalius, Vidius, Placentius, and de Graaf. To Vesalius belongs the credit of being the first to represent transverse sections of the brain. The following century was noted for its great progress in sectional anatomy. It was during this period that the works of Soemmering, Haller, and Vicq d'Azyr, on cross-sections of the brain appeared. Camper contributed an admirable picture of the pelvis in longitudinal section, drawn and engraved by his own hand, and Scarpa pictured the operation of perineal lithotomy by means of drawings from sections through the pelvis.

It is remarkable what success these early investigators achieved, hampered, as they were, by the lack of a method to harden the various structures of the body *in situ*, and, thus, to preserve their normal shapes and relationships. It was not until 1836, when Eduard Meyer introduced the freezing method, that this obstacle was overcome. This method was a decided advance over previous methods and gave a new impetus to cross-section anatomy. Many valuable works followed Meyer's discovery in rapid succession; the more notable of these were the contributions of Pirogoff, Henle, and Braune. Braune published his classic work on "Topographical Anatomy" in 1872. The superiority of Braune's work over those of his predecessors was due largely to his improvements in the technique of making sections, and to his appreciation of art in anatomy. Braune invented a freezing mixture; and he was the first to devise

a method of preserving frozen sections by allowing them to thaw out in strong alcohol. He also advocated true delineation of cut sections, and devised a method for making exact drawings of them. Dwight, in 1881, published a small volume on "Frozen Sections of a Child." This was the first effort in this country to stress the importance of serial sections in the study of macroscopic anatomy. Speaking in this connection, Dwight said: "Believing as I do, that frozen sections will play an important part in anatomical teaching of the future, I shall say nothing of their advantages, which speak for themselves." Dwight's work was followed a few years later (1887) by a publication of Symington on the "Topographical Anatomy of a Child," and, shortly after this (1893), Macewen published an "Atlas on Head Sections."

The introduction in 1895 by Gerota of formalin as a hardening agent marked the beginning of a new era in the study of sectional anatomy. By Gerota's method the bodies were first hardened by injections of formalin (five per cent aqueous solution), thence frozen and sectioned; hence, the structures retained their forms and respective relations not only during the cutting process, but also during all subsequent procedures. Another important advance was made by Terry in 1900. Terry injected a solution made of equal parts of fifty per cent formalin solution and ninety-five per cent alcohol. He obtained excellent results by this method without resorting to freezing. The best sections, according to Terry, are obtained from bodies fixed as stated and then thoroughly decalcified with ten per cent hydrochloric acid. Jackson modified Terry's method by omitting the alcohol. By his method freezing is also unnecessary. Improvements in technique have also been made by Potter, Berry, Eycleshymer, Schoemaker, and others.

With reference to the study of macroscopic anatomy by the sectional method, its importance, from a practical standpoint, cannot be too strongly emphasized. Henle has said that "the common purpose of all anatomical studies is the orientation of the organs in the living body." Sectional anatomy best prepares one to do this. No other method gives as correct an idea of the situation, form and relation of the organs as the study of these structures by means of cross-sections through various levels of the body. The accustomed systematic and regional dissection is, however, necessary to the more detailed study and intelligent understanding of sections. Ordinary dissection separates or takes apart the body, as it were, while in the sectional method it is rebuilt or reconstructed. The one is essentially an analysis; the other a synthesis. Ordinary dissection isolates the structures and more or less disarranges their relationships, while the sectional method reveals their true relations as they appear in the living body. Any knowledge of anatomy to be of practical value must be of such a kind as will enable one to visualize the various structures and organs on the patient before him. It is by combining the dissecting or analytic and the sectional or synthetic methods that such knowledge is best acquired.

As regards the equipment and methods employed in giving instruction in sectional anatomy, some differences exist in the various anatomical laboratories. The method as outlined in this paper is the one in most general use, and, on the whole, gives the most satisfactory results.

First of all it is essential for a course in sectional anatomy to have good anatomic material. Bodies selected for this purpose should be neither obese nor emaciated and they should be as free from any gross pathological lesions that are likely to disturb anatomical relations as it is possible to get in a dissecting hall. The body selected is first injected with a fifty per cent formalin solution, using either the femoral or common carotid artery, or both. It is then floated in a tank filled with a three to five per cent formalin solution. This is done to prevent distortion or flattening of the parts while the body is hardening. If a tank is not available, suspending or frequent rolling of the body will prevent flattening. After a few days the body is thoroughly hardened. It is then taken from the tank and marked off with water-proof ink to indicate the planes through which the sections are to be made. The next step is to photograph the body so as to have a reliable guide for the subsequent study of the sections. The body is now ready for the cold storage vault. The freezing of the body, it should be said, is not essential as the formalin hardening alone permits of good sections being made. Indeed, some laboratories, although equipped with cold storage vaults, omit the freezing of the body from preference. The body is now ready for sectioning. The section-

ing is usually done in one of the three principal planes, i. e., sagittal, coronal, or transverse; all planes are employed. In making sections one should begin at the head and cut in order at intervals of one and a half to two inches for ordinary purposes. If cut too thin the sections soon fall to pieces from usage. Of course, for special study of a region, as of the brain, or for reconstructive purposes, the sections may be cut very fine, even less than half an inch; but, in these cases, freezing is obligatory in addition to the formalin hardening. After cutting the sections are washed with hot running water to remove the sawdust, grease, etc., and are kept in alcohol or in a weak solution of formalin until needed for use. The necessary appliance for sectioning is an electrically driven hand-saw, forty inches in diameter, with twenty-four teeth to the inch.

With reference to the study of sections: this may be done in various ways. Obviously, a most advantageous way is to have such study supplement the regular course of dissection. In this way the one serves as an aid in the interpretation of the other. Sections cut in various planes may be distributed throughout the dissecting room so that they may be used for comparison by the student. In addition to this method of use of sections, the student may make drawings of the representative ones. For this purpose the section is placed in a shallow porcelain tray; a thin plate of glass large enough to cover the section is placed upon it, and the underlying structures traced on the glass with water-proof ink or wax pencil. Having secured an accurate tracing of the section on the glass, the student retraces it on drawing paper. This is done by placing the paper over the outlines on the glass and holding them before a window or over an electric light. The tracing on the drawing paper serves as a skeleton or an outline for the subsequent detailed drawing, which should be made from the actual section, by the free-hand method. The muscles are colored dark red, arteries vermilion, veins blue, nerves yellow, and the connective tissue is left white. All structures in the finished drawing are carefully identified and labelled. The drawings which I have here, are not my own, but were presented to me by Dr. J. Parsons Shaeffer, of Jefferson Medical College, Philadelphia. These drawings were made by students in the regular course of sectional anatomy given at that institution.

In conclusion, let me say, the sectional method of studying macroscopic anatomy has been given such emphasis in late years that the Council on Medical Education of the American Medical Association has recommended that it be a part of the anatomical work in all medical colleges. Sectional anatomy is already playing an important role in many of the leading medical colleges of the country, and is destined to take an even more conspicuous part in anatomical teaching of the future than it does at the present time. Nor will its usefulness be confined to the teaching of anatomy alone; serial sections will, in the future, have a place in instruction in physical diagnosis, especially sagittal sections through the thorax. Also, in courses in gross morbid anatomy serial sections may at times be used with advantage for, besides showing the gross anatomy of such conditions, they afford an opportunity at visualization of the condition in its exact anatomic relationships.

The importance of the sectional method of instruction in macroscopic is now recognized throughout the country, and no modern medical college can afford to omit it from its curriculum.

PUBLIC HEALTH, PRACTITIONERS AND UNIVERSITIES.*

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Mr. President, members of the Seaboard Medical Association, Ladies and Gentlemen:

Permit me to express my appreciation of the honor you have conferred on me by placing me upon the roll of your speakers for tonight; an appreciation blended with regret that Dr. Alderman found it impossible to give tonight a companion piece to his memorable address on Medical Education, delivered by him before this body twelve years ago.†

The State of Virginia has been singularly fortunate in the personnel of its State health authorities. You can completely convince yourselves of "The Value of a Health Officer to a Community," if you learn how much your

*Address delivered before the Seaboard Medical Association of Virginia and North Carolina, at Newport News, Virginia, December 4, 1923.

†See Edwin A. Alderman, "Medical Education," Alumni Bul. of the Univ. of Va.; 3d series; Vol. XI, No. 1: pp. 3-14; Jan., 1918.

State authorities have done in fifteen years to beat back disease, to reduce the number of deaths, to improve life and enrich the State. Not long ago I met a group of eminent European health officers, who were paying us a visit of inspection. Two or three of them said to me in effect: "Your health officers here are quite unique; quite unlike anything we have at home. With us public health is a recognized profession. We do what we see we can do with the money available. We consider that many good things must wait until the authorities or the public is willing to give us more money. But here! No! Your State health officers are not just professional men. They do not wait for appropriations: they spend themselves. They are sanitarians, engineers, health officers, yes! But they are missionaries as well! It will be many years before your people will understand what a great debt you owe to your health officers." With this tribute from discriminating professional sanitarians ringing in my ears, I wish that I could stop to review the work of our State Commissioner of Health and his able assistants.

The title of my address is given as "The Value of the Trained Health Officer to the Community." I shall, however, assume that this value is recognized, and shall seek rather to consider certain changes necessitated in the attitude of the medical practitioner due to the new possibilities of health betterment, and the corresponding changes indicated in the field of medical education, and of university life.

At the start I wish to remark on some of the greater changes affecting medical practice that have come about within our memory. I will pass by the sweeping economic changes of the last thirty years, the recessional from the ample city brown stone front to the snappy switch-on apartment: the progressing social and economic enfranchisement of the laborer and artisan; the changes—amounting indeed to mutations, that have taken place in habits, clothing, foods, amusements, transportation. And yet, changes of this nature have distinctly altered the characteristics of medical practice. Scarcely less of a transformation has appeared in the popular attitude towards hospitals. How many of our grandfathers would have selected a hospital as a place of choice in the hour of illness? Today the hospital habit is one of the few habits left us which seems to have excited no hostile propaganda. This sketchy outline may possibly suggest to your thoughts still other important social changes in the world around us which have occurred within the span of an average life, and which contribute to the altered relations existing today, as compared with a generation ago, between the doctor and the public. The changes are, in fact, great. It is only by a stretch of the imagination that Sir Omicron Pie can be recognized as a professional brother of Sir William Osler. It is recorded that in an earlier generation, a great English physician was chiefly noted for the impressive air with which he produced a watch as he felt a pulse, and said "Ah" as he examined a throat. What consultant today dares rely on any pronouncement which does not include such expressions as "X-ray," "basal metabolism," "histologic diagnosis," "focal infection," "pulse pressure," "endocrine functions," "sensitization," "vitamine requirements" and "sex complex"? Even Sir Thomas Browne, the intellectual equal of our best moderns, seems as one stumbling in the dark when compared with the surefooted modern scientific leader.

If we turn from the social to consider briefly the intellectual aspects of medicine today, we find that the profession of medicine has changed even more within itself than the doctor and his public have changed in regard to each other. This is no occasion on which to discuss the over-crowded medical curriculum, nor is it suitable to review the achievements and applications of modern science in relation to medical progress. May I, however, hazard an opinion as to a general trend? If we glance over the history of a typical widespread infectious disease, let us say, typhoid fever, we find that the advances, from the clear-cut recognition of the disease by Louis, included an advancing understanding of the typhoidal changes in function and structure, and attempts to translate this knowledge into terms of therapy; a few years later the recognition of the cause was followed by an intensive study of the typhoid bacteria; then, suddenly, men's minds leaped to the clear vision of modes of prevention, with the assured future of eventual dominion over this ancient past.

With certain differences, the studies in malaria from the early days of Laveran, Patrick, Manson and Ross, to the time of Gorgas and Carter have carried us from a

determined search to discover the nature of an entrenched and deadly foe to the vision of a day of complete emancipation from that foe's shackles.*

The progressive city of Newport News also furnishes an example illustrating the theme assigned to me. In the turmoil of the great war it was found necessary to give the most vigilant attention to public health improvement in all the cities in this neighborhood on account of the continual visits from the recruits in the great war cantonments near at hand. From the necessities of that time emerged your present excellent health department. Your health authorities, co-operating with those of State and nation did especially important pioneer work in combating the venereal diseases, that group of diseases which loomed up as the most important menace to the health and efficiency of our fighting forces. Though no less destructive in times of peace, these diseases were practically let alone by public health workers until the war pioneers found ways to attack them with success. Since that start the State health authorities, co-operating with health officers here and in other important centers, have continued a notable fight against these diseases, and there are indications that their prevalence is somewhat lessened. This is, really, an encouraging degree of success, considering the inherent difficulties of the subject and the smallness of the State appropriations hitherto available in this field of activity. Knowing, as you do, the ramifications of misery spreading from these diseases, and the importance of maintaining ground already won in a fight against this evil, your association may find that it has a special opportunity just now for public service, through endorsing this work and officially and personally expressing the hope that there will be no diminution in the financial support from the State applicable to the fight on venereal disease.

But it is not only in the case of infectious diseases that a general line of advance in prevention can be recognized. Among nutritional diseases, scurvy, rickets and beri-beri serve as examples illustrating the march of the human army from camp endurance to fort prevention. Thirty years ago, New York City each year witnessed the death of one out of every three babies under five years of age. As Osler put it "to be an infant was the most hazardous occupation known to man." The death rate for the same group in New York City is now less than one-half of its earlier figures, a result achieved by improving the food and general surroundings of infants and of their mothers. In Norfolk the infant death rate in 1900 was 236.4; last year it was 86, a saving of 150 infants in every thousand. Among diseases of internal secretion, there has been less abundant success so far, but the promise of the prevention of thyroid disease by iodine medication seems so valuable that it raises hopes of further successes in the future. It may be claimed in view of such facts, that the general forward movement of medical progress is in the direction of disease prevention.

Surprise is notably a transient emotion. The marvel of today is the habit of tomorrow. The great public and even the trained medical men and historians accept as matters of course the achievements of modern medical science, and yet, long ago, at least as far back as Bacon, philosophers recognized that the human mind might some day control the forces of nature, but no corresponding material advance resulted from the thought. For centuries Christians have made bold claims for the powers of faithful prayer, and have raised uncounted litanies for those in danger, affliction and distress, but only within a half-century have the dreams of philosophers and the prayers of the faithful begun to assume tangible shape and stand forth as the gigantic figures of modern science and social organization. It is truly a modern paradox that a pious group anathematizes the modern sciences instead of embracing them as children of the church's prayers.

Even though a half-century of modern science and social integration has produced astounding improvements, we must regard the present results not as the final product, but rather as the blossoms from trees whose ripe fruits will be even more substantial. We may, in fact must, count on the continuing progress of medical science and united social effort and upon further advances through the trenches of disease. Our children too will live in an age of change, with even slenderer anchorage to the past.

Consider, now, an entirely new situation confronting the practitioner. No sooner were dis-

*In Norfolk there were thirty-seven deaths from malaria reported in 1900: the population has multiplied several times over since then and yet in 1922 Norfolk had only six deaths from this source. In the same period deaths from malaria in six Virginia tidewater cities fell from eighty-six to ten. For statistics my thanks are due to Dr. Plecker, State Board of Health Statistician.

coveries made of methods to prevent disease than those diseases, and those methods ceased to be the special concern of medical men and at once became matters of general human interest. Think, for a moment, of the army now battling for the protection of the public and of future generations through control of disease; nurses, philanthropists, churches, publicists, educators, employers, laborers, insurance companies, politicians, governments, and, everywhere, parents. Has there ever been such an array moving toward a common purpose except during short periods of the gravest common peril? Yet there is nothing ephemeral about this union. There is no faltering because of victories won. Each success brings added power for the next advance. The forces are well organized and alert. Facts useful for disease control are eagerly seized by them and given to the public. Either with or without the aid of medical practitioners, the scientists and organized public are going to move forward overwhelmingly, it may be crushingly, but buoyantly, to conserve the health of future generations.

How shall the medical practitioner comport himself in an age when the "secrets of the profession" are common knowledge? There are, undoubtedly, difficulties which must be frankly faced. From different parts of the world we hear of friction between the health officer and the practitioner. The doctor may set himself in stiff opposition to "socialism in medicine." He may resent the infringements of his freedom due to the activities of the Health Officer. He may growl because his young patients are examined by the school physician, or in the baby clinic. He may be shocked and demur when advised that he should call up his families every half year or so and arrange to give each one a health examination. At the same time he will be very savage if someone else steps in and gives periodic health examinations to his patients and will cry out about unethical conduct, contract practice or State Medicine. He may feel that his means of earning a living is itself being snatched from him through the various health clinics and even more through the reduction in the diseases which bring him the bulk of his income. It is a high tribute both to our practitioners in Virginia and to our health officers that such causes of friction have remained so inconspicuous here, and that the establishment of the new Public Health is being effected with mutual understanding and consideration, and with the co-operation, yes, with the active assistance of our medical brethren. Our Virginia practitioners and our southern neighbors are showing that the new situation can be faced by keeping an eye single to the public good, by giving hearty and unselfish support to measures of public betterment and by exercising patience and balance in the settlement of the conflicts which must result from the clash of the older order with the new.

The great wave of preventive medicine now sweeping us forward, received much of its initial energy from the universities. The eddies and rebounds from the main wave are in turn stimulating the universities by presenting new methods, new fields of training and new goals for human endeavor. If I have at all succeeded in presenting in clear relief some outstanding ridges and eminences of the modern medical landscape, I may now give a bird's-eye view of some of the corresponding fields of university endeavor as they open to our view.

1. The inspection of students described in many university prospectuses should be supplanted by a thorough professional physical examination, more detailed than the public school physical tests. Provision should be made for authoritative follow-up work and for correction of defects. A daily and seasonal routine should be advised, with emphasis on moderation, regularity and continuity. Expert advice and supervision should be offered to students with physical handicaps. Along with this, ways should be found to impress on every student the great truths and laws of personal hygiene and public health. Every student should know that one of his duties as a citizen will be to foster the public health work by word and deed. He should know that "Public Health needs Public Help."

2. In the training of teachers for the public schools, suitable emphasis must be placed on health habits and their cultivation. We have recently launched courses with this end in view.

3. The universities are the natural places for the training of professional public health specialists. In many universities there are elaborate provisions for students in this field. At the University of Virginia, we have entered on this work by establishing short courses, designed to meet specific needs of the

State as recognized by the State health authorities, and we hope to keep pace with the growth of the movement in our community.

4. A student in public health or in the medical school should inhale an atmosphere pungent with the fumes of research. I wish that the atmosphere of our southern State universities was more heavily charged.

5. It is through their medical schools that universities can best lend their influence to the public health movement. Here is where most of the public health leaders will receive their early training for at least many years to come. Here the future practitioner will be moulded. Whether he wills it or not, the practitioner will be subjected to the sweep of the public health tide. Shall he go with the current, or resist it? Much will depend on opinions formed during his student days. The student should have an opportunity to observe the workings of an active public health department.*

This is of an importance not inferior to much of the laboratory training now crowded into the curriculum. He should become acquainted, by personal experience, with the workings of public health clinics for "baby welfare," "tonsils," "tuberculosis," etc. The general objective beyond these activities should be made perfectly clear. However, we will have to go even further, according to my impression. The preventive aspects of each disease will sooner or later be taught along with etiology and treatment, and not merely as didactic matter, but with a view to practical application by the future graduate. This innovation has already been introduced in England.†

The medical student trained at once in the facts of science and in the habits and traditions of his profession will find, I trust, that the ideals of public health are part of his medical heritage. Some may complain that it is proposed to make all doctors into public health officers, but this is an exaggeration. Medical practitioners will fill honorable and necessary positions in our world as long as illness, accident, carelessness, infancy, old age and death retain their places in our language. The physician has long been the trusted family confidant; his profession now brings to him public responsibilities. He will remain, as he is today, a most important part of the public health structure. We must recognize that the new world demands that medical graduates be not only "practitioner minded" but "public health minded" as well. This does not mean that the practitioner shall be cluttered up with the sanitarian's routine and with endless reports and forms. Already the sweep of medical practice and public health has reached a higher level even than the prevention of disease. Prevention is a negative activity. Beyond that we already see that our practitioners can take the lead in an age of "constructive hygiene." With assurance of success in disease prevention have come positive efforts to obtain a fuller expression of health possibilities. This is the active constructive field, beyond the cure of the sick, beyond prevention. Engineers and leaders are needed to guide the public over this freshest path. Does it not lead in the direction of a goal even more desirable than physical perfection itself? The practitioner is the natural leader and guide for this work. Will the practitioner venture on the task? Can our profession work out ethical methods for this development? These, my medical brethren, are great questions which confront our fraternity.

*At the University of Virginia the local Health Officer is on the teaching staff and gives a course to the medical students. Two students serve as sanitary inspectors.

†See **Sir George Newman:** "Permeation of the Medical Curriculum by Preventive Teaching." Brit. Med. Journ.; Sept. 1, 1923, p. 347.

SOME NEW POINTS IN THE NUTRITIONAL CARE OF PREMATURE INFANTS.*

By SAMUEL NEWMAN, M. D., Danville, Va.

Premature birth occasions one of the most impressive losses of human life. According to the State Bureau of Vital Statistics, there were 1,496 deaths in Virginia in 1922, attributed to premature birth. We all know how difficult it is to manage a case of premature birth and how important it is to concentrate on the special factors which condition its successful outcome. According to Budin[1] these are:

1. Temperature regulation.
2. Protection from infection.
3. Proper nutrition.

In this paper we shall limit ourselves to a consideration of the factor of nutrition in the care of the premature infant, and we shall endeavor to answer the two following questions:

*Read before the South Piedmont Medical Society, South Boston, Virginia, November 20, 1923.

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1. What is the energy requirement of the premature.

2. How should this requirement be administered.

While there is agreement among pediatricians with regard to temperature regulation and the meeting of other special indications in the care of the premature, there is a great divergence of opinion with regard to its food requirement. Budin[2] requires about 140 calories per kilo of body weight. Lust[3] places the requirement at 120 to 130 calories per kilo. Birk[4] requires an energy quotient (number of calories per kilo of body weight) of 100 to 110. American text books consulted on this subject give but scanty information and no definite directions how the caloric requirement of the premature infant should be prepared *volumetrically*, that is, the number of calories per unit of volume.

We shall attempt to answer these two questions from the practical clinical viewpoint, from a study of the records, and from first hand observations at the Children's Clinic of the University of Vienna. Before we proceed further, it might be of advantage to review a few fundamental facts in the science of infant nutrition.

The amount of food that an infant may take per day (by *amount* is meant *caloric* value), does not necessarily all go into the support of life. Some infants may get more food than is necessary for growth and exercise. An excess of food—within limits of health—will lead to "luxury consumption," and outside the limits of health, may lead to a train of disturbances. In the amount of food which we give an infant it is necessary to recognize three components. These are:

1. Minimum.
2. Optimum.
3. Maximum.

By *minimum* is meant the amount of food necessary to support the inner body functions. This represents the *basal metabolism*.

By *optimum* is meant the amount of food above the minimum which is necessary to support the various body functions, such as growth, exercise, and fat accumulation.

By *maximum* is meant the amount of food which the infant will be able to metabolize without breaking down its digestive functions.

The question now arises how is the minimum, optimum, and maximum determined clinically?

As it is well known, Rubner[5] established the fundamental fact in nutrition that there is a relationship between body surface and body metabolism (while at rest). The body surface is conceived of as a radiating, or heat producing, surface. Consequently, the food requirement of the body will stand in a definite relationship to its surface area.

Of course, no one will think of estimating the energy requirement of infants, for clinical purposes, by means of the calorimetric apparatus of Atwater and Benedict; or even by the simpler methods of determining the oxygen consumed and the carbon dioxide eliminated by the original Kreogh apparatus or any of its modifications. Yet, for practical purposes, we do possess a method of determining nutritional requirements in relation to body surface.

Pirquet originated the use of the square of the sitting height—the distance from the top of the head to the sitting level—as a basis for the calculation of nutritional requirements in relation to minimum, optimum, and maximum. It is not intended to enter here into a consideration of the theoretical propositions upon which Pirquet bases his nutritional surface. This I have done elsewhere.[6] It will be sufficient to mention that Faber[7] has shown that the food requirement per meter of surface area obtained by means of Pirquet's formula closely approximates the values obtained by Rubner in using the Meeh formula for calculating surface area.

Pirquet and his co-workers have found that the maximum of food which an individual will be able to metabolize within twenty-four hours, within the limits of health, is equivalent to the caloric value of so many cubic centimeters of milk as the square of the sitting height expressed in centimeters. The minimum food requirement, or the basal metabolism, is equal to three-tenths of the maximum. Between the maximum and the minimum we have the optimum, which is a variable, depending on the degree of exercise.

We are now in a position to answer in part our first question as to what is the nutritional requirement of the premature infant. Its minimum requirement will be three-tenths of its sitting square in terms of milk units. We

shall now have to determine the optimum requirement of the premature—the amount of food above and beyond the minimum necessary for growth, fat accumulation, and body movements.

In connection with growth of the human infant it will be well for us to understand the term *living potential.* By this Escherich[8] means the ability of every organism, by means of assimilation, "to sustain itself; to grow; and to reproduce its own kind." As an expression of living potential may be taken the gain per kilo of body weight in a unit of time. Experience has taught us that premature infants with no nutritional disturbances have a greater living potential, or coefficient of gain, than full term infants. At first glance it seems like a paradox that premature infants—supposed to carry with them a *debilitas vitae*—should gain weight faster than normal infants. The explanation for this, as stated by v. Reus,[9] is as follows:

The physiological coefficient of growth shows from the moment of conception a continuous decline. The premature infant is, with regard to its age from the moment of conception, younger than the full term baby. The premature, therefore, is endowed with a higher growth potential than the full term infant. In other words, the full term infant at the moment of birth is nine months from the moment of conception; the premature, on the other hand, may only be seven months from the moment of conception, hence is able to grow faster.

We therefore see that a comparatively high energy quotient will have to be provided for the rapid growth of the premature infant. Talbot well expressed it, that one kilo of body weight of the premature is not equal to one kilo of body weight of the full term infant. In the Pirquet system of nutrition it has been found that five-tenths to six-tenths of the square of the sitting height in terms of cubic centimeters of milk will cover the optimum needs of the premature. A premature infant with a sitting height of 30 cms. will have an optimum need of 0.6 x 30 x 30 = 540 milk units. This means the infant will need food equal in caloric value to 540 c.c. of standard milk (one liter of standard milk contains 667 large calories).

We shall attempt to answer now the second question: How should the food requirement be administered? The feeding of the premature presents a technical difficulty. According to Schick[10] it is necessary to meet one or more of the following difficulties:

1. The weak sucking power of the infant.
2. A slight appetite for food.
3. An occasional absence of the deglutition reflex.
4. The small capacity of the stomach.

The ideal food for the premature infant is unquestionably human milk. Unfortunately it is not always easy to obtain in private practice and sooner or later we shall be forced to resort to artificial feeding. In connection with breast milk it must be stated that it is not always the ideal food for the premature infant from the volumetric standpoint. The stomach of the premature is not large enough to hold the ideal food requirement. In practice we try to overcome this difficulty by frequent feedings, but this subjects the infant to frequent efforts with which it can hardly cope, and this method is not successful in every case.

Schick,[11] in his studies on the question of concentrated nutrition, has established a great many indications for concentrated feeding in pediatrics. The easy and practical method of calculating the nutritional requirement of every individual from the sitting height in the Pirquet system of nutrition and the adoption in this system of milk as a standard with which all other foods are compared, both with regard to caloric value and concentration, has stimulated research in the field of practical dietotherapy. For the purposes of this paper it will be sufficient to make clear the following conceptions:

1. *Even nutrition* (Gleichnahrung). By this is meant a food which in a given volume has the same caloric value as milk of similar volume. Seventeen grams of sugar dissolved in 100 c.c. of water has the same caloric value as 100 c.c. of milk.

2. *Double nutrition* (Duhu; Dubo). By this is meant a food which has twice the caloric value as a similar volume of milk. Fifty c.c. of milk with 8.5 grams of sugar dissolved in it is equal in caloric value to 100 c.c. of milk.

There are a great many other food concentrations, logically designated, which indicate at a glance the relationship of caloric value to volume and the substances from which they are made.

XUM

I do not wish to raise the whole question of the applicability of food concentration in pediatrics. As mentioned above, this feature of dietotherapy has been scientifically and clinically worked out by Schick and his co-workers in the Vienna Children's Clinic.

What I wish to emphasize here is the fact that the feeding of premature infants with one and one-half or double concentrated foods, that is with milk mixtures plus 8.5 or 17 per cent sugar, is the routine of the Vienna pediatric school.

By way of illustration I shall cite the actual management of a few cases of premature birth at the Children's Clinic of the University of Vienna.*

Baby Hans v. Peskier.—Weight at birth, 1,460 grams (3.2 lbs.) After fifteen weeks in the Clinic, the infant doubled its weight. The average weekly *energy quotient* was 140 calories. At the end of the second month and during the first part of the third month, the baby suffered from otorrhea. Otherwise, the gain in weight would probably have been faster. The food concentration was *dubo* and *sesquabo*,—double concentration and one and one-half concentration.

Baby Engel Feldwabel.—Admitted on fifth day after birth with a weight of 1,230 grams (2.7 lbs.) After eight weeks in the Clinic the infant doubled its weight. The average energy quotient was 167 cal. per kilo. The infant received for the most part *duhu* (breast milk with 17 per cent sugar). This case illustrates the value of breast milk and the possibility of a gain in weight on a low protein content.

Summary.

1. The nutritional requirement of the premature can be calculated from its sitting height and expressed in so many c.c. of standard milk as the square of the sitting height in terms if centimeters.

2. The optimum food requirement for the premature is about five-tenths to six-tenths of the square of the sitting height.

3. Food concentration is well borne by the premature infant and it solves a great many technical difficulties in the assimilation of a sufficient quantity of food by the premature.

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*I am indebted to Dozent Nobel for the privilege of using the material of the Pirquet Clinic.

INTUSSUSCEPTION: REPORT OF AN UNUSUAL CASE.

By W. LOWNDES PEPLE, M. D., Richmond, Va.
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If one will but review the literature of this condition and read carefully such exhaustive studies as have been made by Elliott and Corscaden, King, and others, the futility of adding anything that is new to this subject will readily be seen. So the real object of this paper is to put a rather unusual case on record, with a cursory review of the subject as a foreground, and a few practical suggestions as to the handling of such cases.

Intussusception is a telescoping of one segment of the bowel into the segment below it. Any part of the intestine may be the seat of it, but it is far commoner in the small than in the large intestine.

It may vary in extent from a few inches to the better part of the ileum and colon. It may take place very rapidly, the inverted ileum appearing at the anus in a few hours. It may occur at any age, but is far more prevalent among infants and children than in adults.

There are many causes ascribed to it, but a large majority are directly due to hyper-peristalsis, which is induced by irritating foods, infections, or purgatives. Traumatisms, such as a fall or even just jumping a child up and down, have been known to cause it. The presence of tumors of the bowel is a very frequent cause, and especially is this true of the pedunculated variety that hangs into the lumen. They are gripped by the peristaltic wave and carried along down, pulling the bowel wall in after them.

Elliott and Corscaden in their remarkable detailed report of 300 cases find that 100, or one-third of their series, were due to tumors, sixty being benign and forty malignant.

In the August, 1923, Clinics of North Amer-

ica, Drs. Edward and Louis Morehead call attention to the very common ileo-cecal variety, and draw an analogy between the prolapse of the ileum through the ileocecal "sphincter" and the prolapse of the rectum through the anal sphincter, so frequently seen in infants.

The symptoms of intussusception are those of partial or complete intestinal obstruction plus tenesmus; bloody, mucous stools; and the presence in the abdomen of a somewhat curved sausage-shaped tumor.

The diagnosis may be easy or it may be extremely difficult. Since the established presence of the tumor is almost pathognomonic, if there be symptoms of obstruction with tenesmus and bloody mucous stools it is extremely important to demonstrate its presence or absence.

A high rectal examination with the finger can be made even in very young infants, with far less difficulty than is usually supposed. Light chloroform anesthesia should be given as an aid if needed for relaxation. Many tumors will be demonstrated in this way that would be missed on ordinary abdominal palpation.

There are numerous classifications of intussusception, with groups and sub-groups; but from the standpoint of the clinician there are two—the subacute or chronic and the acute. In the first the process is slow, with exacerbations and remissions; the obstruction is not complete; part or all of the fecal matter goes through. There is time for thought and planning, and the application of well-known surgical principles renders difficult obstacles at least surmountable. But in the acute variety the whole situation is pregnant with hazard. There is intestinal obstruction, plus partial or complete strangulation of the bowel's blood supply. If the case is in an infant, the dice are all loaded against us.

If there are chronic and subacute cases, surely some acute cases must recover spontaneously or in response to treatment. It is highly probable that every tumor case has started to descend and righted itself once or many times before the final disaster takes place.

So there is a field for medical and mechanical treatment; and, in every case where intussusception is even suspected remotely, there is one thing we can always refrain from doing, and that is giving purgatives, which can only make bad matters worse.

There are two methods of relief that have had a fair measure of success in reducing intussusceptions of, or involving, the large bowel. They are the injection of air or of fluids into the colon. The use of air is not without danger, since it is hard to regulate either the amount used, or the pressure attained. Ordinary high enemata are far safer and about as efficacious.

I have used a method in several cases with the late Dr. McGuire Newton, in which we believe we were successful in at least two cases. I first saw it described in the *Journal of the A. M. A.*, a great many years ago; and unfortunately I can not recall the name of the author. He used the inverted position in rectal examinations and colonic treatments. If we slip an anoscope in, in this position, the rectum

Fig. 1—Method of giving high enema.

and colon balloon out with in-rushing air; the viscera drop down against the diaphragm; and one can pour water or fluids in with a saucepan, and literally "drop them high up" in the descending colon. We tried this in several cases where we believed that intussusception existed, and thought that we relieved them. We have varied this by giving enemas at low pressure, instead of using the anoscope or funnel and pitcher. I commend it as a harmless practical method which I believe to be of value.

XUM

The surgical problem is an extremely grave one. If the case is gotten early enough, before the bowel wall is seriously damaged or the mesenteric vessels are thrombosed, it can be reduced by expressing the intussusceptum by gentle pressure on the lower segment and still gentler traction on the upper segment.

But many cases present inseparable adhesions or gangrenous bowel with thrombosed vessels. We cannot simply do an enterostomy as is indicated in many other types of obstruction when we wish to tide over a crisis. It is often imperative to do more or less extensive resections, and in an infant badly shocked to begin with, the outlook is far from promising.

Local anaesthesia as far as possible, the lightest general anaesthesia when imperative, gentleness of manipulation, rapidity as far as it is consistent with good work, careful maintenance of the body heat, are factors which may mean very, very much in the class of case as outlined.

I have had six cases and three were due to tumors which I wish to record. The first one might be classified as a subacute case, as it was of a week's standing and the man's condition was fair. He had an intussusception of the ileum, caused by a polypoid tumor the size of a walnut with a moderate-sized pedicle. The bowel was readily reduced, the tumor excised, and the bowel closed. He reacted well but several hours later his pulse and respiration ran rapidly up and he died in a few hours. I believe his death was due to pulmonary embolism, the embolus having been dislodged from one of the thrombosed mesenteric vessels.

The second was a chronic case which was under observation for some time, during which there were several exacerbations with subsequent remissions. On operation, the intussusception was found to be due to a small sessile growth in the wall of the ileum, which so constricted the lumen that a resection was done with end-to-end anastomosis. This patient made an uneventful recovery, but died in a few months from metastasis of the growth—which was a lymphosarcoma.

The third case, which I wish to report in detail, was as follows:

D. W., white, male, age 14 months. The child has been unusually strong and vigorous with nothing to suggest abdominal trouble up to the present attack. On December 2d, 1923, he seemed unwell and to be in pain. He was given calomel and castor oil, with good bowel movements. The symptoms of general discomfort continued. On December 4th he was seen by the family physician. There was a mild bronchitis and a general listlessness, with a temperature of 100 degrees. That morning the child had passed a good deal of old blood and complained of paroxysmal abdominal pain. It had vomited once or twice, but not very much. On the 5th it was seen by another physician, who thought pneumonia was developing. It was given a dose of castor oil. On the morning of the 7th the family physician saw it again and, as there was abdominal pain and no action had been gotten from the oil, an enema was given. This brought only a little blood. A mass was now detected in the lower left abdomen, so the child was brought to St. Luke's Hospital. It had one vomiting spell on the way and the vomitus was fecal in character. It reached the hospital at 5 P. M. on the 7th, having been sick about five days in all. It was very pale and listless. It appeared shocked, with rapid feeble pulse, and temperature about 100 degrees. The white count was 18,000, with forty-two per cent polys and fifty-six per cent lymphocytes. A sausage-shaped tumor could be plainly felt in the left lower quadrant of the abdomen, and was also felt on rectal examination.

The diagnosis of intussusception was confirmed. A grave prognosis was given, and an immediate operation advised.

Under local anaesthesia a lower left rectus incision was made and the mass delivered, which proved to be an intussusception of the ileum into the cecum, transverse, and descending colon. When this was reduced, the starting-point of the intussusception was found to be a small tumor, two and one-half or three inches in length, attached to the inside of the ileum some two feet above the ileo-cecal valve. Its point of attachment seemed to be an inverted diverticulum with a firm mass at its tip, the lumen being the size of a slate pencil.

The tumor was excised at its base and the opening sutured transversely. Sixty c.c. of saline was left in the peritoneal cavity, and the wound closed. The patient died a few hours later, of continued shock.

Pathological remarks by Dr. S. W. Budd:

A portion of an invaginated bowel removed

at operation for intussusception measured one and three-quarters by three-quarters of an inch. The distal portion of the removed bowel is balloon-shaped and solid—the proximal portion is hollow and the lumen admits a large forceps without difficulty.

Fig. 2—Illustration of Case 3.

The intestinal wall is thickened, engorged, edematous and in an early stage of gangrene. On close observation the relation of the mucosa and serosa to the lumen of the bowel is reversed so that the lumen is lined by the serosa.

In the tip of the inverted diverticulum of the intestine is a gland-like mass two cm. by one cm. in size. The glandular mass was located within the submucosa.

Microscopic Examinations—The bowel showed a gangrenous condition. The several coats of the bowel were heavily infiltrated with polymorphonuclear leucocytes, fibrin, blood and coagulated proteids. There were but few remnants of the original structure. The muscularis showed an active coagulative necrosis. There were a few glands which aided me in locating the mucous membrane. The gland structure in the tip of the inverted diverticulum was pancreatic tissue. All of the histologic structures of the pancreas were present—the lobules, the interlobular spaces, the interlobular ducts, and the islands of Langerhans.

When we consider the large portion of the foregut from which the pancreas arises, and when we consider the number of diverticula (two ventral and one dorsal), that enter into the formation of the pancreas, and when we think of the rapid growth of the foregut in the pancreatic zone it is not difficult to picture a small portion of pancreas being unable to keep the pace of an actively growing diverticulum and becoming detached and carried backward or forward by a rapidly growing bowel. This is the probable explanation of the origin and position of our aberrant pancreatic case.

Aberrant pancreas while rare tumors are the most common anomaly of the pancreas. They may occur in the duodenum, the jejunum, the stomach, the ileum, the colon; in rare instances they may be found in Meckel's diverticulum and in the abdominal wall in the region of the umbilicus. Hanau described a duodenal diverticulum tipped with an accessory pancreas, and Weichselbaum reported a similar diverticulum of the stomach.

In Case 52, of the series reported by Elliott and Corscaden, an almost identical case was reported, and this is the only one I have thus far been able to discover. I quote his exact words:

"Pathological Remarks: Accessory pancreas in blind end of diverticulum had formed pedunculated tumor in lower ileum."

Miscellaneous

The Proposed Richmond City Ordinance.

In view of the laxity in the administration of the laws of medical licensure and in view of the inadequacy of present laws to meet new conditions associated with post-war-conditions and with the "prohibition" status throughout the country, the proposed ordinance for the City of Richmond, herewith submitted, together with the splendid arguments ably presented by Dr. J. Allison Hodges, of Richmond, representing the Richmond Academy of Medicine, before the Ordinance Committee of the Richmond City Council, will doubtless be of more than passing interest to our readers in the profession. Cults and illegitimate practitioners abound in the land: Connecticut offers an example of the gravity of the situation. (Editor).

"1. That it shall be unlawful for any person to practice as a physician or surgeon, or to practice the art of healing bodily or mental infirmities, with or without physic or surgery, in the city of Richmond, except and without such person shall have obtained from the Commissioner of Revenue of said city a license in accordance with the provisions of Chapter 15, Richmond City Code, 1910, and the ordinances amendatory thereto or substitutionary thereof. This clause shall not apply to persons who only practice the religious tenets of their church and minister to the sick or suffering by mental or spiritual means.

"2. That it shall be the duty of said Commissioner of Revenue, before issuing a license to any person as being set forth, to require such person to present to him proper certificate issued by the State Board of Medical Examiners, showing that such applicant has duly qualified before said board to practice in accordance with the provisions of Chapter 68 of the Code of Virginia."

This ordinance is directed against no special persons nor cults, but is offered in order that the State Medical Practice Act may be strengthened and our city better protected from incompetent and inefficient practitioners of the healing art. This is, moreover, deemed essential, because the present city ordinance, in enumerating the different professions and trades in the city which should be taxed, does not specifically mention "chiropractors," as this method of healing was not notably prevalent in this city in 1910 when this act was passed; the city ordinance, however, does mention "healers," and, after the medical law was passed by the state in 1913, advancing the requirements necessary for any one to obtain license to practice the art of healing, and exempting by courtesy all who at that time were so engaged, and thus licensing them, among others sixteen chiropractors, a loophold for violation of the Medical Practice Act, through the omission to include "chiropractors," was made.

As a result of this combination of circumstances, any one desiring since 1910 to practice the healing art in this city, has been enabled, not only to defy the state medical law, but has had a plausible reason to do so, by being allowed to take out a license, even though it was in defiance of Chapter 68 of the Code of Virginia. Naturally, this action on the part of the city, has brought about confusion and increased difficulty in enforcing this state medical law for the protection of public health.

The above ordinance merely seeks to correct these inequalities, and make it impossible for the city to aid and abet would-be violators of the law, for under present conditions, any one can take out a license as a "healer," and immediately proceed to practice, as he chooses, the art of healing.

The state medical law sought to establish one general and reasonable, but definite standard of requirements, by which every applicant to practice the healing art in this state should be tested by its examining board, but the present city ordinance clearly allows any person to set his own standards, and thus enter the profession by a side door, and yet reap the same rewards that revert to any one having been compelled to obtain license in legal manner.

As matters now stand, it is a question, then, of the city either upholding the state law, as to medical practice, or of assisting intended violators of the same law to evade it by a questionable interpretation as to the particular method of practicing the art of healing under the name of "healer."

This is a matter of most vital importance to the people at large, for, if continued, any one who pretends to practice any special art of healing can come to the city, and under its protection, practice without even passing *any* board or commission, as to his capabilities to do what he professes, and this would be in opposition, likewise, to the custom in this city of having separate boards to pass upon the competency of different trades, as, for example, such as plumbers, electricians, etc., and it seems eminently logical that if the city has thus sought to protect its material welfare, it should, also, in matters of health and disease, be as careful, and even more stringent.

This then is not a contention among physicians to force the public not to approve, nor accept any special dogma, nor any one line of treatment, but to require of all applicants the same general basic preparation before practicing any one or more methods of healing. The Medical Practice Act of 1913 was originated by members of the medical profession, in deference to the wishes of the American Medical Association which has about 80,000

members, and was perfected by the Virginia State Board of Education, who became its sponsors, and who have since been the overseers of its administration, for its representatives pass upon the qualifications of every applicant to study medicine before they become students at any Medical College in the state.

This law is the result of the best thought of scientific men throughout this country, and is in working effect in the large majority of the progressive states, and is supported by all of the higher institutions of learning in this state, which have conformed their literary requirements to meet these standards, the people being thus better protected against the errors and dangers of incapacity and incompetency.

The medical profession neither here nor elsewhere is fighting the chiropractors or any other cult, except on the ground that they have not measured up to these standards, but instead, have presented and practiced methods which are narrow and limited in their scope, and which are as unscientific, as they are unreasonable. The fact that one cult may simply practice their creed by the use of their hands, or some other method, in the treatment of disease, without ever making a diagnosis, but simply governing itself by what the patient may say is the trouble, or another, that may teach that some other individual method, such as the assertion that ninety-five per cent of all diseases originate in the spine, doesn't relieve them of the responsibility, nor protect the people against the fact that disease itself is as varied in its causes, as it is different in its manifestations, and only proves the indisputable fact, that in this, as in other things, one idea nor one factor doesn't make, nor include the whole.

It has been alleged, that to enact this ordinance would be class legislation and the deprivation of the right of any one to make a living as he might choose, but in no sense can it be considered class legislation, unless it be that it would protect a class which at present consists of sixteen members licensed by courtesy and of another class of 134 members, who are endeavoring to practice the art of healing in opposition to, and in direct violation of Section 68 of the State Code of Virginia regarding the practice of the art of healing, for the recognition and endorsement now of lower standards for these few, would certainly be rank individual and class injustice to many, both in the past and present.

There is no opposition by members of the medical profession to any number of new licensees coming into the state, provided they all come through the same gateway, by proving their fitness according to regulations in force since 1913. At that time, the medical law which was passed in conformity with all other progressive states, gave notice to the world of its requirements, and all who have come here since its passage, have chosen to come, already knowing the facts, and they have come with the intention either of upholding or defying this law; consequently, this whole matter has been passed upon by the state in 1913, and now it is the evident duty of every one to sustain the existing law.

This ordinance, in short, is simply to make more forceful the state law, and to supply the omission in the previous city ordinance, and is a part only of the great educational system of the state, which demands in all lines of endeavor, a better preparation by acquiring more and varied knowledge. To lower these standards, would be to disrupt the whole state educational system. No one denies that some cases may be benefited by any kind of treatment that may be used, but the people demand that they be protected in every way possible regarding their health and lives, and it is for this reason that physicians, knowing the facts, stand always ready to promote the best interests of higher education, both in a literary and scientific way. As a consequence of the progress manifested in this direction, it is a well known fact that representatives from fourteen foreign countries have come to Richmond during this past year to study our local and health problems, and secure information and instruction along these professional lines, and our progressive state and city laws and their requirements must be given the credit for this in large measure.

As mentioned before, the present Medical Practice Act is violated by any one practicing a sectarian or special cult who has not secured a state license, and our indictment is against all who have not shown the requisite literary preparation and medical training, and this ordinance, hence, is necessarily, also, opposed to the practice of the chiropractors, because they are the most frequent violators, and have admittedly, as a body, the least scientific training, their courses of prescribed study averaging from six to eighteen months as a rule, and

XUM

resulting, so far as known, in no single advancement, or discovery, in medical science.

In many other states chiropractors are required to be licensed, just as are others who engage in the art of healing, and in the state of Ohio, Chief Justice Wm. Howard Taft, of the Supreme Court, upheld this opinion as to necessary preparation in all the basic sciences being the same for all, and in referring to their constitutional liberty, he further states: "Our jails and penitentiaries are filled with inmates who have been deprived of their liberty for the public good, and the power of the state to deprive its citizens of their lives for the public good has never been questioned," and also the United States Supreme Court has ruled in the case of Ira W. Collins vs. the State of Texas that "any person shall be regarded as practicing medicine who shall treat or offer to treat any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method, or to effect cures thereof, and charge therefor, directly or indirectly, money or other compensation."

By this decision, then, any one using chiropractic methods or any other method or methods, for cure and reward, is legally a practitioner of medicine, and must abide by the laws in force in the state where he practices.

Several bills, owing to three factions among the chiropractors, were presented before the present General Assembly, and one demanded that a chiropractor should be upon the State Medical Board, but all of these bills offered, fixed a lower standard than is at the present required by the board, and no chiropractor in the state at present has had sufficient preliminary scientific education to qualify him for any such position.

The osteopaths in this city and state regularly took the prescribed examination before the state board for eleven years and proved that they had colleges, which were giving the proper basic education, before they asked for a representative on the State Medical Examining Board.

Furthermore, it would seem a paradox for our citizens to give money to our two medical colleges, and then allow representatives of any cult or sectarian school of practice, to come here and stay a few years, and then enter upon the art of healing without having as much education as we compel our own colleges to give, and our own students to receive.

All that is asked, is to let the present state board continue as it has for the past ten years, and to have every practitioner pass the state's standards and prove himself worthy according to these standards that every progressive state has adopted for the protection of the health of its citizens; in other words, one door open for all to pass through and qualify and then, let the legally licensed practitioner use any method he pleases.

Justice and fairness demand that the chiropractor, or any other single barrelled practitioner who shall take into their hands the lives of others, shall be placed under the same requirements for practice as doctors of medicine, and if proved competent, they will receive the same recognition that is now accorded all properly educated applicants for license to practice the healing art.

The outstanding difference between the so-called cults and regular medicine is, that those of the cults whose practice is limited to one cause or one locality for disease, simply treat the supposed disease that is present and supposedly originates in that special region, while regular medicine takes into account the whole human system, and not only treats present diseases, but what is much more important, prevents them.

It is not so much the concern of this city or state what plan of practice the physician pursues, as it is the necessity for knowing the amount of medical education he has accumulated and how much he knows of the whole human machine, especially of the cause, nature and prevention of disease.

Unless a physician who takes into his hands the lives and health of the people, is willing to prove before the State Examining Board how both to maintain present health and prevent future disease, by showing knowledge, not only of one part of the human system, but of the whole, he is a danger and menace to personal and public health.

Another danger of lowering the standards for entrance into the practice of the healing art, or of setting up different standards for different special methods of treating disease, is that when one of these one-idea or one-method practitioners is licensed, as was done by courtesy in 1913, these practitioners sooner or later utilize other methods of treatment, for which they were not licensed. For example, one newcomer in this city last week advertised that he practiced chiropractic with his hands alone, while another more recent addi-

tion issued the following remarkable advertisement in the *Richmond Times-Dispatch*, Monday, March 10, 1924:

"Realizing fully that chiropractic is not a cure-all, and in the many years of our experience we have learned that by the scientific methods, in addition to chiropractic adjustments, the sick are restored to health much quicker, for this reason we have added to our services many scientific drugless methods, such as the wave exerciser, for renewing life in deadened muscles, paralysis, etc.; the great sunlight treatment, creates circulation, relaxes muscular tissue, used especially on the back before the chiropractic adjustment is given—this makes the adjustment much easier and painless, it is also indicated in stiffened joints and lumbago; auto-condensation, for the treatment of high blood pressure; violet rays, high frequency electrical treatment, etc."

In other words, one who has been licensed in 1913 as a doctor of chiropractic alone, now advertises that many methods of regular medicine will be henceforth used, thus virtually denying the efficacy of the single method, under which, and for which license was originally granted, and thus placing himself on a parity with the licensed general practitioner.

To prevent all such irregularities, all that is asked is that all persons seeking to practice the art of healing in Richmond, shall be treated "alike," with justice to all and special privileges to none, and that the ordinances of the city of Richmond shall uphold the laws of the state.

Correspondence.

An Open Letter to the Medical Profession of Virginia.

Norfolk, Va., March 3, 1924.

To the Editor:

Our profession has been continually stirred up and harassed during recent years by the question of irregular and quack practitioners. The following, or some similar, plan is submitted for discussion.

The Medical Society of Virginia, as representing the great body of regulars, should appoint a committee to go before the State legislature with a statement something like this: "The regular profession of medicine has from time immemorial stood between the general public and the quack, in an honest attempt to protect the former from the ignorance and maliciousness of the latter; the profession has viewed with increasing irritation the accusations by the quacks, and often by the public, that it is jealous and fearful of its own existence and, for that reason, is persecuting the irregulars, and endeavoring to have them refused recognition before the public as properly prepared healers of the sick. The time has come when the profession refuses to be made the goat any longer. It maintains that it is no more its duty than the duty of the law-makers of the State, to protect the lives, health and happiness of the citizenry of this State from the general run of quacks, and it hereby refuses to assume any longer, that responsibility. If you gentlemen wish or think it wise to turn loose on the public, the various and sundry cults and quacks, whose name is legion, let it be distinctly understood that the responsibility is yours: we hereby stand from under.

"The regular profession does not claim anything like infallibility, it acknowledges that it makes mistakes, but it is willing to stand or fall on its merits. It has centuries of honorable history behind it, and its members are able to qualify under the wise provisions laid down already in our State laws, before they offer themselves as custodians of the public health. All that is necessary is that the law-makers shall see to it that no one be allowed to offer for that high calling, until he shall have qualified himself by preliminary scholastic education, and sufficient, *honest*, medical education and training. There is no necessity for a multiplicity of boards and standards. The State is fully protected now, in that respect: it is now entirely up to you, whether you wish those standards met or not. The regular medical profession, in its own interest will continue to meet those standards and continue to raise them among its own members, as science advances. The regular profession also wishes to serve notice on the various State and municipal officials whose business it is to enforce the laws governing the practice or malpractice of quacks, that it will no longer act as obtainer of evidence, and prosecutor before the court for such law breakers: it has placed itself in this false position long enough, and its efforts have been misjudged alike by the people and the officials."

The State Society, aided by the component societies, should then appropriate enough funds to have its position and its ultimatum to the

legislature well advertised to the public, so that all may know, from now on, where lies the responsibility when John Smith's child has his spine adjusted for tuberculosis, and John Smith's father has his spine adjusted for cancer of the gall-bladder, etc., *ad nauseatum.*

It is submitted for discussion whether this is not the correct way to meet this question of quackery, that will always be with us.

BURNLEY LANKFORD, M. D.

Analyses, Selections, Etc.

Antitoxins, Bacterial Vaccines and Glandular Products With Their Practical Indications.

Dr. Charles Stevens, Baltimore, of the Department of Experimental Medicine, Parke, Davis and Company, in an address recently given before the Wise County (Va.) Medical Society, spoke of how, in the manufacture of diphtheria antitoxin, they first obtained a pure culture of the diphtheria bacilli, by plating-out until all other micro-organisms have been eliminated, leaving a pure culture of the bacilli. Suitable media are then inoculated with the culture and placed in the incubator for a suitable length of time. He gave a description of the filtering of this media, of the filtrate containing the diphtheria toxin, and then the testing of this toxin by means of the method evolved by Professor Ehrlich, and exemplified this by means of a chart showing the test. He stated that this toxin is then injected into the horse, begining with 1/10 c.c. and increasing gradually until 250 c.c. were given the animal. During this time there had formed in his blood stream the antibodies which have the power of neutralizing these large amounts of toxin. The next step was the bleeding of the horse and the separation of the serum, which contains the antibodies, from the blood clot, which is not used in the production of the antitoxin. The serum is then aged and ripened and tested by means evolved by Professor Ehrlich.

Dr. Stevens then spoke of the immunity of bacterial vaccines and the method of obtaining a pure culture of the bacteria necessary to make bacterial vaccines, and showed slides illustrating the various steps necessary to make the finished product. Practical dosages were given and a statement was made as to the value of bacterial vaccines and the indications for their use.

His discussion of glandular products covered the method of identifying the glands by experts or, if necessary, microscopic examination. The glands are obtained only from animals that are free from disease. All extraneous matter generally sent in with glands, such as connective and muscle tissue is removed. Then followed a discussion of the chemical and pharmaceutical problems necessary in the removal of fat, each gland being a problem in itself, as solvents used must only remove the fat without any destruction to the hormone. Care is required in the desiccation, so as to retain in the desiccated portion only the pure gland tissue and its full hormone activity. After this, each gland was discussed individually as to its practical therapeutic indications. The method of standardizing thyroid, pituitary and adrenalin was gone into briefly.

The whole lecture was illustrated by means of stereopticon and slides.

Intestinal Manifestations of Syphilis.

R. Pensaude and L. Rivet state that intestinal syphilis is less frequent than gastric. The intestinal manifestations of hereditary syphilis are rarely isolated and generally accompanied by other specific cutaneous and visceral lesions. They appear the seventh month and develop more or less rapidly and extensively as to whether or not they are treated specifically. The small intestine is more frequently affected than the large, and diffuse or circumscript infiltration is seen with or without miliary gummata. Between the fingers one can feel the thickened mucous membrane and gummatous nodules. Sometimes they ulcerate and perforate into the uterus, which instance has been reported by one author. Spirochetes have been demonstrated in these lesions. Often they form autoptic findings in the stillborn. If the child lives it has diarrhea of an indefinite type but irresponsive to all but specific treatment. The child often dies of cachexia. Hemmorhage may be fatal.

Symptoms in the parents of the child will aid the diagnosis. The Wassermann test will complete it. The mother, especially if nursing, must be treated simultaneously.

The intestinal symptoms of acquired syphilis may develop during the secondary or tertiary stages. Those of the second stage are not well known. They may be : (1) Enteralgia, with common or bloody diarrhea and severe pain, and may be considered the consequence of the

therapy, especially of cyanid of mercury administration; (2) secondary catarrhal enteritis accompanying cutaneous and muco-cutaneous eruptions and in some instances catarrhal icterus; (3) typhoid, which is more serious (the syphilitic typhosis, on the other hand, is benign).

The tertiary manifestations, though rare, are accompanied by other tertiary symptoms. They are generally multiple, dry infiltration, ulcerous softening, followed by sclerosis and possibly shrinkage of the intestine. The thickening of the intestinal walls may be considerable and to touch may appear like a tumor. There may be a peritoneal reaction in the neighborhood. These lesions constitute gummata with periendarteritis. The bacterial proof has so far failed. Clinically the most prominent symptom is diarrhea, which is very persistent and often accompanied by colic of varying intensity and which is sometimes bloody and dysenteric. It yields to specific treatment only, but quickly. If not treated, cachexia may come on and the state may simulate tubercular enteritis. Peritonitis and perforation of the intestine or intestinal hemorrhage may complicate it. Treatment is rapidly effective, but recurrences are frequent.

There is another type—the stenosing, pseudocancerous. This may follow after a period of diarrhea. Often the diagnosis is made only after surgical intervention. These cases are similar to the psuedocancerous gastric syphilis. These syphilomata of the intestine yield rapidly to specific treatment. In some instances the disease involves the colon and rectum.—(*Medicine, Paris*, 1923, IV., 750).

Hepatic Syphilis.

Treponema in the liver may cause hepatitis. It may be hereditary or acquired. This subdivision is not altogether definite. The hereditary development may be early or late, in the fetus or newborn. The infection may occur in the uterus, it may be mixed, both paternal and maternal, or either. It is one of the most frequent causes of death of the fetus. The liver in these cases will look soft and wrinkled and of the color of dead leaves. This liver may be seen in the stillborn or in the newborn during the first two or three months of life, but it also may be seen in the child and the adult. In hepatic syphilis which develops during intrauterine life the infection may be transmitted by the umbilical vein. It is diffuse and involves the entire organ. Very often the fetus dies and is expelled, from the sixth to the eighth month. Sometimes extrafetal ascites may develop which will cause hydramnion. The abdomen of the mother becomes very much extended. She suffers from abdominal compression and dyspnea. The fetal sound and movements stop. In syphilitic hepatitis of the newborn the child will often die within a few days. It is often born prematurely or is frail, weighing from 1,000 to 1,500 grams. The placenta is hypertrophied and weighs 1,000 grams. The child's face is violet and wrinkled. Coryza, simple or hemorrhagic, pemphigus of the hands or soles may develop. Spleen and liver are much enlarged, often growing in size within a few days.

Infants with hepato-splenic disease may be borne at term by a syphilitic who may have been treated during pregnancy. They may seem normal for several weeks and after two months stop growing and develop vomiting and diarrhea. The skin becomes dry and the child looks unhealthy. The abdomen is distended. The increase of the size of the liver may be palpated. The spleen is likewise enlarged. The abdomen is tympanic, but generally no ascites forms. Syphilids and pemphigus, mucous plaques, and fissures in the mouth and at the anus will develop. Sometimes there is periostitis or osteitis of the skull. In some cases icterus may exist from birth. If not treated, the symptoms become worse and go on to convulsions and rapid death. In the hemorrhagic form hemorrhage is seen during the first stages near the umbilicus. Ecchymoses and subcutaneous hemorrhage also in the intestines manifest themselves. In some cases of hereditary syphilis anemia is quite marked.

In the adult there are symptoms of indigestion, anorexia, constipation, enlargement of the liver and spleen. It is hardly possible to distinguish it from certain types of tubercular cirrhosis. In this diagnosis the teeth, eyes, and ears must be noted.

The mother should be treated during pregnancy and the child given the van Swieten remedy, 15 drops in milk three times a day or lactate of mercury 1 to 1,000. Neosalvarsan may be injected into the epicranium or the longitudial sinus. During the second period hectine or mercury, arsenic or bismuth. Gummata of the liver must be treated with mercury and iodids. Surgery does not promise good results.—(*Clinical note. Gaz. d. hop., Paris*, 1923, XCVI., 1146).

XUM

The Truth About Medicine

In addition to the articles enumerated in our letter of January 28, 1924, the following have been accepted:

Abbott Laboratories
- Butesin Picrate
  - Butesin Picrate Ointment.

Parke, Davis and Co.
- Dibromin.

E. L. Patch Co.
- Patch's Flavored Cod Liver Oil.

Vitalait Laboratory of California
- Vitalait Culture Bacillus Acidophilus

Wilson Laboratories
- Epinephrin—Wilson.
  - Epinephrin Powder—Wilson.
  - Epinephrin Solution, 1:1,000—Wilson.

NEW AND NON-OFFICIAL REMEDIES.

Corpus luteum-Lederle.—The fresh substance from the corpora lutea of the hog or cow, dried and powdered. For a discussion of the actions and uses of ovary preparations, see New and Nonofficial Remedies, 1923, p. 219. Corpus luteum-Lederle is supplied in the form of 2-grain tablets only. Lederle Antitoxin Laboratories, New York.

Corpus luteum extract—Lederle.—A sterile solution of those constituents of the corpus luteum which are soluble in water containing sodium chloride 0.85 per cent, sodium citrate 1 per cent, and chlorbutanol 0.5 per cent. Each Cc. contains 0.02 Gm. of soluble matter in addition to sodium chloride, sodium citrate and chlorbutanol. For a discussion of the actions and uses of ovary preparations, see New and Nonofficial Remedies, 1923, p. 210. The preparation is marketed in 1 Cc. ampules and in 5 Cc. vials. Lederle Antitoxin Laboratories, New York.

Ovarian residue—Lederle.—The residue from the fresh ovaries of the hog or cow after the ablation of the corpus luteum, dried and powdered. For a discussion of the actions and uses of ovary preparations, see New and Nonofficial Remedies, 1923, p. 210. Ovarian residue—Lederle, is supplied in the form of 3-grain tablets only. Lederle Antitoxin Laboratories, New York.

Silver nitrate solution 1 per cent.—Lederle.—An aqueous 1 per cent solution of silver nitrate contained in ampules composed of beeswax. The preparation is intended for the prophylaxis of ophthalmia neonatorum. For use, a pin hole is made in the ampule and, after suitable preliminary cleansing of the eye, two drops are placed in each eye of the newborn. Lederle Antitoxin Laboratories, New York.

Whole ovary—Lederle.—Whole ovarian glands of the hog or cow, freed from extraneous matter and dried at or below 38 C. For a discussion of the actions and uses of ovary preparations, see New and Nonofficial Remedies, 1923, p. 210. Whole ovary-Lederle is supplied in the form of 5-grain tablets only. (Jour. A. M. A., Feb. 2, 1924, p. 391).

Flumerin—H. W. and D.—Disodium-2-hydroxymercurifluorescein. The disodium salt of 2-hydroxymercurifluorescein. Flumerin H. W. and D., when injected intravenously, is tolerated by rabbits in doses containing from eight to twenty times the amount of mercury present in the therapeutic dose of other mercurial drugs commonly used. When injected into rabbits with syphilitic lesions, the drug brings about resolution of the lesions without apparent injury to the kidney. When injected intravenously into man in doses of 3 mg. per Kg., flumerin has caused the disappearance of spirochetes from primary and secondary syphilitic lesions. Flumerin has brought about resolution of the lesions and in about one-half the cases changed a positive blood Wassermann reaction to negative. In tertiary syphilitic lesions resolution of the lesions with a disappearance of a positive Wassermann was brought about in a majority of cases treated. The dose of flumerin—H. W. and D., is from 0.002 to 0.005 Gm. per Kg. of body weight injected intravenously in 2 per cent aqueous solution. The drug is marketed in tubes containing respectively 0.15 Gm., 0.20 Gm., 0.25 Gm. and 0.30 Gm. Hynson, Wescott and Dunning, Baltimore. (Jour. A. M. A., Feb. 9, 1924, p. 469).

Epinephrin—Wilson.—A brand of epinephrin—N. N. R. Made from the suprarenal gland. For a discussion of the actions, uses and dosage of epinephrin, see New and Nonofficial Remedies, 1923, p. 112. Epinephrin—Wilson, is marketed in the form of epinephrin powder—Wilson (vials containing epinephrin—Wilson, 1 grain), and epinephrin solution, 1:1,000—Wilson (containing epinephrin sulphite equivalent to 1 part ephinephrin—Wilson in 1,000 parts of physiological solution of sodium chloride). Wilson Laboratories, Chicago. (Jour. A. M. A., Feb. 23, 1924, p. 531).

PROPAGANDA FOR REFORM.

Immunization Against Typhoid.—Ordinarily typhoid vaccine is administered at intervals of seven days. It is said that if the interval is less than seven days, the immunity may be less than after longer intervals. It is asserted also that the maximum response follows when the intervals between the injections are lengthened to eighteen or twenty days. No definite statement can be made as to what the optimal intervals really are. Immunity after antityphoid inoculation is not absolute. Army medical officers express the opinion that immunity from inoculation begins to decline in from two to two and one-half years; but even after four and five years, the typhoid rate of inoculated troops has been estimated at about one-fourth that of uninoculated troops. (Jour. A. M. A., Feb. 2, 1924, p. 411).

Treatment of Lichen Planus.—Lichen planus can be usually successfully managed by the intramuscular injection of some preparation of mercury. Mercuric chlorid is commonly employed in a dosage of 0.015 gm. (one-quarter grain) twice weekly. A 1 per cent solution of this drug in physiologic sodium chlorid solution is prepared, and 15 drops injected at the first dose, 20 the second and subsequently 25 at each injection. From eight to sixteen injections are commonly sufficient to clear up the disorder. Local measures for relief of itching may be employed at the same time. (Jour. A. M. A., Feb. 2, 1924, p. 411).

The Absorption of Epinephrin.—Although epinephrin is absorbed from the mucous membranes of the nose, throat, mouth, urethra, vagina and rectum, the effectiveness of such modes of introduction is too uncertain to make them popular. The drug is not absorbed from the gastro-intestinal canal to induce any appreciable effect. Intravenous administration must be used with extreme caution and the manifestations secured are likely to be rather evanescent. The response to intramuscular injection is considerable. There is a widespread belief that the subcutaneous administration of epinephrin causes little effect and that the action is decidedly uncertain. However, the relief which is secured from the hypodermic injection of epinephrin in asthmatic patients is evidence that absorption by this route is rapid and satisfactory. It probably proceeds by lymphatic rather than by blood vascular channels. (Jour. A. M. A., Feb. 9, 1924, p. 473).

The Insulin Reserve.—It is highly probable, according to R. N. Wilder, that patients with the acute type of diabetes will in a few years lose all native tolerance for glucose, and become completely dependent on insulin. In such cases 37 units (old

standard) of insulin may be required, and in some cases as much as 56 units a day. A partially diabetic patient may suddenly be converted into a totally diabetic patient by infection and, therefore, a month's supply of insulin should be kept on hand. Reginald Fitz and William P. Murphy state that there are two classes of diabetic patients: those to whom insulin is a luxury and those to whom it is a necessity. They hold that the wise physician will conserve the use of insulin to the cases of such diabetic patients as can dispense with it or use only small amounts and will hold it in reserve as an indispensable product, for the patients who require large amounts in order to secure definite results. (Jour. A. M. A., Feb. 9, 1924, p. 473).

"Lime Starvation" and "Neu-bone."—A series of articles by Alfred W. McCann, is now appearing in the New York Evening Mail, in which it is asserted that there is a deep laid plot on the part of the New York Tuberculosis Association, the New York Health Commissioner, or the American Medical Association, to keep from the medical profession and the public the alleged fact that there is a treatment for tuberculosis infinitely more efficacious than that now employed. This treatment is stated to be based on the theory that tuberculosis is caused by lime starvation. McCann tells us that the originator of the "lime starvation" theory of treatment is one John A. Russell, and he also brings in the name of William Grant Hague, as one of the chief apostles of Russell's theory and treatment and proposes the use of a calcium preparation "Neu-bone." For more than twenty-five years Russell has been riding the "lime starvation" hobby. For nearly ten years a New York concern has been exploiting the "Russell Emulsion" and the "Russell Prepared Green Bone." A few years ago, William Grant Hague was going around the country delivering lectures before medical societies, advertising the Russell products. The statements about Neu-bone suggest that this is the Russell Prepared Green Bone under a new name. The medical profession is thoroughly familiar with the lime starvation theory and treatment. It has been weighed in the balance of therapeutic and clinical tests and found wanting. In 1917, the Council on Pharmacy and Chemistry reported on the Russell products and stated that the over-worked lime starvation theory certainly lacked any tangible confirmation. (Jour. A. M. A., Feb. 9, 1924, p. 489).

Treatment of Pernicious Anemia.—Arsenic and blood transfusion are the two established forms of therapy in the treatment of pernicious anemia, though neither is curative. Arsphenamin in doses of 0.03 to 0.06 gm. intramuscularly at intervals of days or weeks has been found useful in some cases, though it has failed in others. (Jour. A. M. A., Feb. 9, 1924, p. 491).

Frozen Toxin-Antitoxin.—Students in two Massachusett's institutions were inoculated with diphtheria toxin-antitoxin mixture, and thereafter, forty-four suffered severe local and constitutional reactions. Investigation revealed the fact that the serums used had been subjected to extremely low temperature and later thawed before injection. It was discovered that freezing dissociates the combination of toxin and antitoxin. (Jour. A. M. A., Feb. 16, 1924, p. 552).

Ichthyol and Ichthalbin Omitted from N. N. R.—The Council on Pharmacy and Chemistry publishes a report announcing the omission of Ichthyol and Ichthalbin from New and Nonofficial Remedies and a report on the therapeutic value of Ichthyol on which the deletion of Ichthyol and Ichthalbin is based. Ichthyol was introduced into dermatology about forty years ago, and it came into wide use during its skillful exploitation. It has been difficult to obtain acceptable evidence concerning the therapeutic value of Ichthyol. The opinion in regard to its value has been divided with good observers on both sides of the question. After some years of consideration and doubt, the Council has come reluctantly but decisively to the conclusion that there is no satisfactory evidence that Ichthyol has any therapeutic value other than that of a mild antiseptic and that of being soothing to inflamed mucous membranes. Merck and Co., who market the product in the United States, declined to limit their claims so as to harmonize them with the views of the Council, and, therefore, the Council has omitted Ichthyol from New and Nonofficial Remedies. The Council also omitted Ichthalbin, marketed by E. Bilhuber, Inc., New York. Ichthalbin is described as a compound of ichthyolsulphonic acid and albumin. Its actions are stated to be essentially the same as those of Ichthyol. Therefore, E. Bilhuber, Inc., was informed that, unless the therapeutic claims made for Ichthalbin conformed to the claims permissible for Ichthyol, Ichthalbin would be omitted from New and Nonofficial Remedies. Circulars in use during 1922 contained recommendations for the internal use as an intestinal antiseptic and in skin diseases. Since these claims were incompatible with the evidence obtained by the Council, Ichthalbin was omitted. (Jour. A. M. A., Feb. 16, 1924, p. 565).

Carbon Tetrachlorid for Hookworm.—Carbon tetrachlorid is at present obtaining such an amount of favorable notice that, unless subsequent experience demonstrates as yet unknown dangers, it may be considered a suitable method for the treatment for hookworm. The drug is palatable, requires no preparation of the patient and is relatively nontoxic. The only fatal results so far recorded were associated with the use of an impure product. The commercial product is unfit for use. Hence, the New and Nonofficial Remedies quality should be insisted on by prescribing carbon tetrachlorid Medicinal—N. N. R. The dosage generally recommended is 0.2 Cc. (3 minims) for each year of life; with an adult a dose not exceeding 3 Cc. In prescribing, one may order twice the amount indicated for a single dose, and the patient may be instructed to repeat the dose at an interval of fourteen days. It is simply administered from a tablespoon which has been half filled with sweetened water. It is usually best to administer magnesium sulphate two hours after the drug is given. (Jour. A. M. A., Feb. 16, 1924, p. 569).

Book Announcements

Hernia. Its Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis, and Operative Treatment. By LEIGH F. WATSON, M. D., Associate in Surgery, Rush Medical College, Chicago. 232 original illustrations by W. C. SHEPARD. St. Louis. C. V. Mosby Company. 1924. 8vo. 660 pages. Cloth, $11.00.

The scope of the book is abdominal hernia. The subject is well covered and in detail. The author's introduction is a concise history of the subjects of surgery and hernia from ancient times to the nineteenth century. This section alone gives the book value.

Though every variety of abdominal hernia is given free and comprehensive discussion, the two largest sections of the work are General Considerations of Hernia and Inguinal Hernia.

XUM

The standard operations are discussed in detail. In the case of those not standardized, the description is sufficient for the principles to be clearly defined. Very few operations with any pretention to merit are omitted.

We regret the viewpoint of the author as to the percentage of congenital defects in the inguinal region, as it is out of harmony with the percentage of congenital defects in other parts of the body.

To assemble and digest the material for this work has required years of painstaking labor. There has been a need for just such a book. It fills the requirements. To the young surgeon it will be a valuable text-book and guide; to the older surgeon it will be a comfort as a reference.

J. W. HENSON, M. D.

Operative Surgery. Covering the Operative Technic Involved in the Operations of General and Special Surgery. By WARREN STONE BICKHAM, M. D., F. A. C. S., New York City, Former Surgeon in charge of General Surgery, Manhattan State Hospital, New York; Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In 6 octavo volumes totaling approximately 5,400 pages with 6,378 illustrations, mostly original, and separate Desk Index Volume. Vol. III. contains 1,001 pages with 1,249 illustrations. Philadelphia and London. W. B. Saunders Company. 1924. Cloth, $10 per volume. Sold by subscription only. Index Volume free.

The Biology of the Internal Secretions. The Endocrine Factor in Development, in Subnormalities, in Neoplasms and Malignancy, in Nervous and Mental Diseases and in Heredity. By FRANCIS G. DERCUM, M. D., Ph.D., Professor of Nervous and Mental Diseases in Jefferson Medical College. Philadelphia and London. W. B. Saunders Company. 1924. Small 8vo. 241 pages. Cloth. Price, $2.75.

Methods in Medicine. The Manual of the Medical Service of George Dock, M. D., Sc.D., formerly Professor of Medicine, Washington University School of Medicine, St. Louis. By GEORGE R. HERRMANN, M. D., Ph.D., Instructor in Medicine, University of Michigan; Formerly Assistant in Medicine, Washington University, etc. St. Louis. C. V. Mosby Company. 1924. 521 pages, illustrated. 8vo. Cloth. Price, $6.50.

The Antidiabetic Functions of the Pancreas and the Successful Isolation of the Antidiabetic Hormone—Insulin. By J. J. R. MACLEOD, Professor of Physiology, University of Toronto, and F. G. BANTING, Research Professor, University of Toronto. Beaumont Foundation, Annual Lecture Course II. 1923. The C. V. Mosby Company. St. Louis. 8vo. 69 pages. Cloth. Price, $1.50.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on All Medical and Surgical Subjects, by Leading Members of the Medical Profession Throughout the World. Edited by HENRY W. CATTELL, M. D., Philadelphia, with Collaborators. VOLUME I. Thirty-fourth Series, 1924. Philadelphia and London. J. B. Lippincott Company. 1924. 308 pages, illustrated. 8vo. Cloth. $10 a year.

Applied Pathology in Diseases of the Nose, Throat, and Ear. By JOSEPH C. BECK, M. D., F. A. C. S., Associate Professor of Laryngology, Rhinology and Otology, University of Illinois, College of Medicine; Chief of Staff, Otolaryngology, North Chicago Hospital. St. Louis. C. V. Mosby Company. 1923. 8vo. 280 pages with 268 original illustrations, including 4 color plates. Cloth. Price, $7.50.

National Health Series. Edited by THE NATIONAL HEALTH COUNCIL. Funk and Wagnalls Company. New York and London. 1924. 16mo., full flexible fabrikoid. Average number of words per volume 18,000. Price per volume 30 cents. Complete set of 20 volumes (ready about May 1, 1924). $6.00.

The first five volumes of this series, now ready, are:

Cancer: Nature, Diagnosis and Cure. By Francis Carter Wood, M. D., Director, Institute for Cancer Research, Columbia University.

Man and the Microbe: How Communicable Diseases are Controlled. By C. E. A. Winslow, Dr. P. H., Professor of Public Health, Yale School of Medicine.

Community Health: How to Obtain and Preserve It. By D. B. Armstrong, M. D., Sc. D., Executive Officer of the National Health Council.

The Baby's Health. By Richard A. Bolt, M. D., Gr. P. H., Director, Medical Service, American Child Health Association.

Personal Hygiene: The Rules for Right Living. By Allan J. McLaughlin, M. D., Surgeon United States Public Health Service.

Each of the five volumes covers a subject of vital importance to the general public. The language is non-technical and easily understood. They are compactly written but are so clearly expressed that the layman will not have to wade through pages of non-essential matter and technical phraseology to get at the truths he seeks.

The New Science of Radiendocrinology in its Realm in Rejuvenation. Based on the Radiation Technique of Dr. Eugen Steinach, of Vienna. By HERMAN H. RUBIN, M. D., Director of the American Institute of Radiendocrinology. Member of American Association for the Advancement of Science, the American Medical Association, etc. Medical Science Publishing Company. 7 East 43rd Street, New York City. 1923. 12mo., cloth. 64 pages.

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Editorial

Virgina League for Health Education and Medical Progress.

The progress of medical science is dependent largely upon the efforts of the medical profession, which must not only initiate and test the advances in modern science, but also must instruct the public as to the necessity and advantage of these, relative to personal and public health.

It is believed by many, that physicians, as a rule, are more interested in their practice than in their profession, and that the physicians do not, in many matters in which they seek the aid of the people, take the public sufficiently into their confidence. Consequently, the people at large are not materially interested in these matters, because they are not informed, or falsely informed; and as a result, do not co-operate in progressive methods intended for their relief.

The profession needs this assistance and, to this end, the Virginia League for Health Education and Medical Progress was organized at the last meeting of the Medical Society of the State of Virginia in Roanoke. The League's officers and membership will consist of physicians, the allied professions, nurses, laymen, and members of the Woman's Auxiliary of the Medical Society of Virginia, all being representative of the different sections of the state, who will form local groups or units that will co-operate with the Executive Stall of the League, and thus assist in the work of health education and medical progress, all to be under the direction and auspices of the State Medical Society, and all to co-ordinate their work with existing accredited boards and committees.

This plan of organization, seeking for the first time the direct co-operation of the laity with the profession, received the unanimous endorsement of the Executive Council, the House of Delegates, and of the Society, and appeals to the physicians, especially to aid in carrying out its purposes along the lines indicated.

The necessity for some such organization has been notably apparent recently, for the ignorance of many citizens in regard to essential matters pertaining to personal and public health, as well as to the progress of scientific medicine, is almost unbelievable, and has been unfortunately illustrated in many sections of the state by the lack of education regarding the use and value, for instance, of the Schick test, toxin-antitoxin for the prevention of diphtheria, the importance of malnutrition, etc., and in the recent General Assembly, relative to the tenets and claims of certain sectarian cults in the practice of the art of healing.

The purposes, in brief, of the League which will be advocated, both locally and otherwise, will be, among other things, the following:

1. Personal and Public Health Instruction;
2. Periodic Health Examinations;
3. Pre-natal Care and Child Welfare;
4. Conservation of the Health and Sight of Infants and Children of the pre-school age;
5. Necessity of "taking stock," mentally and physically of School children, and of Dental Hygiene;
6. Information relative to Cancer and Tuberculosis and Prevention of Heart Disease.
7. County Sanitation and Institutional Reforms;
8. Information regarding Medical Progress;
9. Information to laymen and profession as to the various dogmas of sectarian cults;
10. Instruction of the laity as to some of the community medical problems and diseases, and their prevention, and
11. When deemed feasible and advisable by the Executive Staff Officers, a State Health Exposition shall be held in some city in the state.

Treatment of disease is not the only important function or duty of the doctor's life; the public should have certain basal information

regarding health and the progress of medicine, not the schisms of the profession, nor the merits of certain methods, but sufficient knowledge regarding disease of the entire human system, to safeguard itself, and to protect life against any practitioner who does not show, and prove by examination some conception of what constitutes disease.

This is a task which will not be easy of realization, and it will be slow in its accomplishment, but it is one that should appeal to every physician who truly loves his profession and realizes his obligations.

Organization of County Medical Societies for Promoting Periodic Medical Examinations.

In the March issue of the *American Medical Association Bulletin*, B. L. Bryant, Bangor, Maine, secretary of the Maine Medical Association, has an article under the above caption. As we have recently had much to say along these lines in our editorial columns, we take the liberty of reproducing it.

Two years ago the Maine Medical Association voted at its annual meeting to co-operate with the other health agencies of the State in carrying out a campaign for periodic health examinations. In a quiet way we have been working with the profession and through the agencies of volunteer health organizations to reach the public, but up to a few months ago, had made no effort for a concerted drive.

Now, however, the Committee of Public Relations of the Maine Medical Association has made out a plan of campaign which has been approved by the State Board of Health and the Maine Public Health Association and which is now being put into operation.

MAINE PROGRAM

1. Among physicians (two objects). (*a*) Value and necessity of periodic health examinations. (*b*) Methods and technique of conducting them.

State Journal: Monthly articles and printing of blanks.

State Association: Speakers and general demonstrations at annual meetings.

County Societies: One meeting devoted to the subject, led by a team of three or more: One from the state department of health, one from the state public health association and one from the state medical association. Other speakers furnished on request.

Organization of county committees of public relations under the direction of the committee of public relations of the state association; these committees to have charge of the work of their counties in detail.

Co-operative health clinics by the three major associations, with demonstrations.

General: Mailing to each physician in the state a personal letter with instructions and blanks by the state medical association; also a personal letter from the state board of health and the Maine Public Health Association.

2. Among citizens.

State Board of Health: Through its bulletins.

Through all its officers in the field and various departments, especially child welfare and nursing.

Maine Public Health Association: Through its publications.

Through affiliated societies.

Public press.

Public health nurses.

Various departments, such as the cancer division, emphasizing the necessity of general physical examinations to discover the special defects covered by these immediate fields.

A standard lecture prepared by the three groups but issued in the name only of the state department of health and the Maine Public Health Associations; this lecture to be circulated and read before all lay organizations.

In order to carry out any program of this kind successfully, we must appeal first to the physicians as a body and to the physician as an individual. He must see the necessity and importance of the work and must be educated in the best technical methods of carrying it out. This cannot be done by revival meeting methods, but by months and years of educational work.

We cannot expect the profession to change in one night from traditional pathological to progressive preventive medicine. It will perhaps be impossible for some, especially the older men, unless finally driven by the demands of their own clientele. They must be impressed with the fact that we, as a profession, are further away from our public than any other business or profession. That this will at the same time be doing the greatest possible service for the public and bring the physician and the people he is to serve in closer contact, beside being the best antidote possible for the popular cults.

In our campaign, we approach the physician first, because, unless he is in a receptive mood and ready to co-operate with those who come to him, the program never can succeed. He should realize the necessity for the work and the methods required, besides the great need for co-operation. This work among physicians will be a co-operative one led by the state medical association assisted by the state board of health and Maine Public Health Association.

Articles on health examination will be carried in the state journal. We have had an examination blank printed, simplified somewhat from that issued by the American Medical Association. For a busy practitioner it must be so simple that he can comprehend it at once. If you make a thing too complicated, he won't have anything to do with it. This is printed in duplicate and folds at the back with columns running up and down instead of across. On the side of the blank there is space for name and address for filing. By slipping in a piece of carbon, you have a duplicate when you make the examination, so when finished it can be torn in two and the patient given one blank and the other retained for the physician's file. If, by using this simply as a guide, we can succeed in getting a good thorough examination without a blank, we shall have accomplished a great deal.

Preparatory work has been going on for some time through the meetings of the county societies, conducted by the various officers of the state medical association, the president, secretary and councilors. This will be continued systematically by its committee of public relations, a co-operative committee made up of physicians from the three major health groups, including officers and members of the state board of health and the Maine Public Health Association. Under their direction, county committees have been appointed in nearly all the county societies. These committees will have charge of the detail work in the counties. They will arrange meetings, select speakers and help make the proper contact with the lay organizations.

Co-operative health clinics have already proved a great success. They have been carried through in different parts of the state and more have been planned. These clinics are arranged by the three major groups in conjunction with a community or group of county societies. Medical and surgical clinics are held in the hospitals forenoons, while the afternoon meetings are arranged, one by the state board of health, the other by the Maine Public Health Association. A general union meeting is held the first evening, ending with a banquet for the purpose of a general getting together of all three groups, physicians, nurses and lay workers. Talks are given by the principal speakers of the different meetings, thus bringing the workers of all groups together and offering opportunity of closer acquaintance with each other and the different branches of the whole health plan. These clinics have been very successful.

Unfortunately, our medical school which had been doing first-class work for a century, was deleted during the high tide of hysterical medical reform and sacrificed to the fetish of an arbitrary standard of organization. When it needed the helping hand most and time and assistance of reorganization, it received the axe. For this reason it will be very difficult to provide the necessary post-graduate instruction for this work of health examination which we had planned among other things, before being deprived of our teaching center.

We are mailing to each physician a personal letter together with blanks and a reprint of instructions on the necessity and methods of making proper health examinations. This will be followed later by other letters from the state department of health and Maine Public Health Association. All physicians will be advised to impress on their patients in a personal way the value of coming once a year at least for a thorough physical examination.

This closes the campaign as planned among physicians, and it will be carried out just as soon as possible, but sustained over a long period.

As for the campaign among members of the laity, we considered it not good policy for physicians to appear as a group in conducting this campaign, nor wise for them to go out and issue an invitation for the public to come into their offices. This would be interpreted as a scheme for the personal advantage of the physician, who would profit from the examination. The more the physician keeps out of this game the better.

This campaign will be conducted solely by the state board of health and the Maine Public Health Association. Under the state department of health the state is divided into districts, each in charge of a state health officer.

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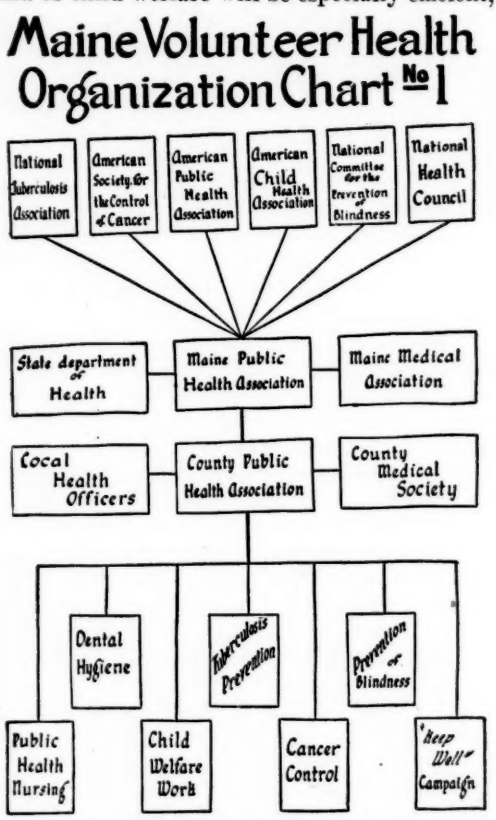
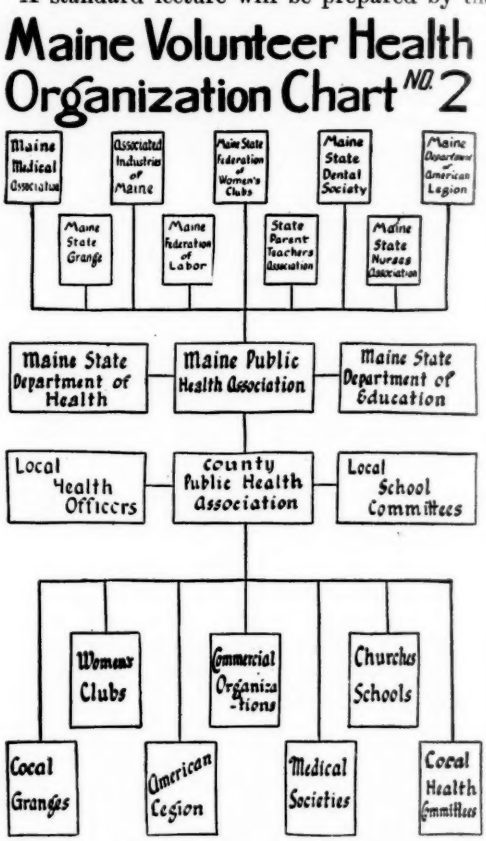
These officers will be instructed how in general to get the idea to the people in their health meeting talks. Their department of nursing and of child welfare will be especially efficient,



having charge of all public health nurses, both of the state department and of the Maine Public Health Association.

The Maine Public Health Association, through its publications, its affiliated societies and the public press, is better able than anyone else to carry on a publicity campaign. There would be no feeling that any physician is in any way advertising himself or getting any advantage from carrying out this work. Through the public health nurses and through various departments, such as the cancer division, a thorough canvass will be carried out in conducting the campaign, emphasizing the necessity of general physical examinations to discover special defects. This will be done, not only by the cancer division, but by the dental hygiene division, the nursing division, the child welfare division and the anti-tuberculosis division where it is absolutely necessary to emphasize the importance of discovering specific diseases by this general overhauling or thorough physical examination.

A standard lecture will be prepared by the



three groups, but issued in the name of the state health department and the Maine Public Health Association. This lecture is to be circulated and read before the lay organizations, such as organized labor, Women's clubs, churches and all others affiliated with this group. We are doing this successfully in the cancer division with the public health association at the present time.

A brief consideration of these charts of the Maine Public Health Association will show the channels through which this campaign of educating the public is to be conducted.

The three major groups, the State Department of Health, the Maine Public Health Association and the Maine Medical Association with all the affiliating societies as shown on the charts are conducted in such a manner that they are able to act as a unit through a com-

mittee of public relations. This committee is made up of the Health Commissioner, the president of the Maine Public Health Association, the secretary and editor of the *Maine Medical Journal*, and three others, physicians prominent in health work.

News Notes

Staunton our Convention City.

The doctors of Staunton and Augusta County are showing great interest in the annual meeting of the Medical Society of Virginia to be held in Staunton, October 14, 15, 16 and 17, and are anxious to have a large attendance. With a view to looking after the various details of the work incident to the meeting, an executive committee and a number of sub-committees have been appointed. These are as follows, the first named being chairman of the committee:

EXECUTIVE COMMITTEE

Drs. Alex. F. Robertson, Jr., T. W. Hankins, H. F. White, J. L. Alexander, H. G. Middlekauff, and T. M. Parkins.

SUB-COMMITTEES

Finance—Drs. R. P. Bell, D. T. Gochnauer and M. P. Jones.

Entertainment—Drs. Kenneth Bradford, Guy R. Fisher, W. M. Phelps, H. F. White and J. S. DeJarnette.

Hotels—Drs. George H. Thomas, H. M. Wallace and C. C. Jones.

Meeting Halls and Committee Rooms—Drs. J. E. Womack, J. F. Hubbard, H. M. Rowan and J. W. Freed.

Commercial Exhibits—Drs. J. F. Fulton, T. S. Richardson and Kon Wyatt.

Scientific Exhibits—Drs. W. S. Whitmore, Glenn Campbell and C. D. Underhill.

Badges and Printing—Drs. C. W. Putney, J. B. Stone and L. L. Putney.

Publicity—Drs. H. G. Middlekauff, C. P. Obenschain and F. H. Crawford.

Automobiles—Drs. F. M. Hanger, J. B. Rawlings and J. H. Thomas.

Reception—Drs. M. J. Payne, J. B. Catlett, R. S. Griffith, W. F. Hartman, I. H. Trimble, R. P. Bell, W. C. Roller and A. L. Tynes.

Golf—Drs. H. S. Henkel, G. F. Hollar, C. M. Blackford and C. P. Rexrode.

Ladies—Mrs. F. M. Hanger, chairman.

Law to Preserve Racial Integrity.

Dr. W. A. Plecker, State Registrar of Vital Statistics, announces that Senate Bill 219, to preserve racial integrity, passed the House on March 8, 1924, and is now a law of this State. "It shall hereafter be unlawful for any white person in this State to marry any save a white person, or a person with no other admixture of blood than white and American Indian. For the purposes of this act, the term 'white person' shall apply only to the person who has no trace whatsoever of any blood other than Caucasian; but persons who have one-sixteenth or less of the blood of the American Indian and have no other non-Caucasic blood shall be deemed to be white persons."

All persons born before June 14, 1912, when birth registration became effective, may yet be registered as to color and birth, upon application, and these registrations will be preserved by the State. Cards and information concerning this should be secured from your local registrar or from Department 1924 Law, Bureau of Vital Statistics, Richmond, Va. Send 25 cents (not stamps) to cover cost of recording this data.

Clinical Congress, American College of Surgeons.

The Virginia-West Virginia branch of the Clinical Congress, American College of Surgeons, will hold its annual meeting in Richmond, on May 2nd and 3rd. Dr. J. Shelton Horsley, Richmond, is chairman of this organization, and Dr. Murat Willis, also of Richmond, secretary. It is planned to hold clinics at the various hospitals of the city—St. Luke's, Grace, St. Elizabeth's, Johnston-Willis, Stuart Circle, Memorial, St. Philip's, Dooley, and Retreat—in the mornings of both days. The scientific papers scheduled for this meeting will be read on the afternoon of the 2nd of May and a public meeting will be held at Jefferson Hotel that evening. The closing session on the afternoon of the 3rd will be given over to a discussion of the business affairs of the organization.

Drs. Robert C. Bryan, Charles R. Robins and W. Lowndes Peple compose the local committee in charge of affairs.

A New Measuring Board for Babies.

The United States Bureau of Standards has co-operated with the Children's Bureau of the United States Department of Labor in designing and building a new and much-improved

board for measuring babies. A patent has been applied for by the Bureau of Standards and will be dedicated to the public in accordance with government policy.

The board consists of a flat base upon which the baby is placed, lying down, with movable wooden "slides" at right angles to the base, one at the foot and one at the head. The measuring scale is in a hollowed groove in the base.

There are two striking differences between this new board and those most commonly used. First, it has *two* movable slides instead of one, and second, readings may be taken from the *outside* of the slide which rests against the baby's head, instead of from the inside.

The advantage of having two movable slides is that the baby may be placed on the board, quickly, comfortably, and with a minimum of handling. Both slides are adjusted to his height (or length) at whatever point between the two he may be placed.

It is also a distinct advantage to be able to make outside readings. On the usual measuring scale the baby's position on the board frequently interferes with a clear view of the scale and makes readings from the inside of the slide difficult. No such difficulty exists to interfere with accurate and speedy readings on the new board.

The measuring scale on the new board is furnished by a meter stick to one end of which the foot slide is attached. This meter stick fits into the slot or groove running down the center of the board and may be moved back and forth as required by the position of the babies being measured. (The Children's Bureau employs the centimeter scale for measurements used as the basis for scientific reports and the inch scale in its popular demonstrations). The measurement is shown by a brass indicator screwed to the outside of the head-slide with a pointer projecting over the edge of the slot in which the meter stick moves. An accurate reading can be made from the outside of the slide to which the indicator is attached because the distance from the baby's head (which touches the inside of the slide) to the pointer is equal to and compensates for the distance from the foot slide to zero point on the meter stick.

Further information about how to make or to purchase measuring boards of this design may be secured from the Chief of the Children's Bureau at Washington. A photograph of the board may also be secured.

Doctor Elected Mayor of Richmond.

Dr. J. Fulmer Bright, a practicing physician of Richmond, Va., was given the Democratic nomination as mayor of this city, in the primaries held on April 1st. This is equivalent to his election in which case he enters upon his duties on September the 1st. Dr. Bright is a native of Richmond and an alumnus of the Medical College of Virginia.

In offering its congratulations to Dr. Bright, the medical profession wishes him success in his administration.

Honored for Fifty Years of Service.

Dr. Llewellin Eliot, Washington, D. C., one of the oldest living graduates of Georgetown University School of Medicine, last month celebrated his fiftieth year of active practice. His friends honored him by giving him a reception at his home in that city, and the medical faculty of the Georgetown University School of Medicine presented him with a loving cup, the presentation speech being made by Dr. George M. Kober, dean of the school.

Though of advanced age, Dr. Eliot still engages actively in consulting practice and contributes to scientific periodicals. He is an ex-president and interested member of the Medical Society of the District of Columbia and was an associate editor of this journal, under its former management.

Pediatric Society Organized.

The Richmond Pediatric Society was organized February 7th, at the Westmoreland Club, this city, upon call of Dr. N. Thos. Ennett.

The following officers were elected: Dr. N. Thos. Ennett, President; Dr. St. George T. Grinnan, Vice-president; Dr. Thos. D. Jones, Secretary. The Executive Committee is composed of Drs. St. Geo. T. Grinnan, Thomas D. Jones and Henry S. Stern; the program committee includes Drs. Howard Urbach, Basil B. Jones and J. B. Stone.

This is purely a scientifice society and only those who limit their practice to Pediatrics are eligible to membership. Meetings are held on the first Thursday night of each month.

This is the only Pediatric Society in the State of Virginia, and its founders express the hope that it will do much toward stimulating the general practitioner to a better under-

standing of the care and treatment of the diseases of infancy and childhood.

The Walter Reed Medical Society

Will hold its next meeting at Newport News, Va., May 14 and 15, under the presidency of Col. L. A. Thomson, M. C., National Soldiers Home, Va. Dr. L. E. Stubbs, of Newport News, is secretary. This is the annual meeting of the Society, at which all business of the organization is transacted. An interesting program is also being arranged. At this meeting, it is expected that some action will be taken regarding co-operation with other societies in the purchase of the birthplace of Dr. Walter Reed, and it is hoped that sufficient interest will be aroused to suitably mark and keep up the place in question.

Lectures in Medical Hydrology.

A course of lectures in Medical Hydrology, supplemented by demonstrations in London and by a study tour to Bath and Cheltenham, is to be given at the University of London in the week commencing May 5th. Particulars may be obtained on application to Hon. Sec., Hydrology Teaching Committee, care University Extension Department, University of London, Imperial Institute Road, South Kensington, S. W.-7. The fee for the course is three guineas.

Hygeia—The Health Magazine.

In these days when every one is seeking all possible information about health matters, why not suggest to your clientele to subscribe to "*Hygeia*," the layman's magazine on health matters? This will *not* give perverted ideas and is interesting reading. It is published in Chicago, under the auspices of the American Medical Association, and has the sanction of the medical profession.

Dr. J. B. McKee,

Recently of Woodson, Va., is now located at Plasterco, Va.

Richmond to Lose Good Health Officer.

Dr. C. C. Hudson, health officer of Richmond, Va., has accepted an offer to take charge of the combined health unit of Greensboro and Guilford County, North Carolina, and will enter upon his new duties on May the 1st. Dr. Hudson is an alumnus of the Medical College of Virginia and first worked with the Richmond Health Department in 1910. Later, he went to Danville, Va., and to Charlotte, N. C., returning to Richmond from the last named place in 1920, shortly after the present form of government became effective. Dr. Hudson is a specialist in organization work and has helped make the Richmond Bureau of Health one of the most effective in the country.

Dr. E. C. Levy, director of public welfare of Richmond, states that Dr. Hudson's successor has not been named at this time.

Dr. R. L. Raiford,

Sedley, Va., announces the opening of offices in Franklin, Va., for the practice of diseases of the eye, ear, nose and throat.

The Virginia Society of Oto-Laryngology and Ophthalmology

Meets at Lynchburg, Va., on April the 13th. This Society is composed of specialists in Virginia and the membership is now in excess of sixty. Dr. J. A. White, of Richmond, is president, Dr. James Morrison, Lynchburg, vice-president, and Dr. E. U. Wallerstein, Richmond, secretary-treasurer.

Dr. Ross Skillern, of Philadelphia, and Dr. Harry Friedenwald, of Baltimore, have been invited to read papers. A symposium on tonsillectomy and a number of papers and reports of cases will also be on the program.

Pageant to be Given to Aid in Establishing Chair of Nursing at U. Va.

On "Florence Nightingale Day," May the 12th, there will be held pageants in the various cities and towns of Virginia, by the Foundation Fund Committee of the Graduate Nurses' Association of Virginia. Proceeds from these pageants will go toward the fund of $50,000 which this Association has pledged itself to raise for the endowment of a chair of nursing at the University of Virginia. The establishment of such a chair at our State University will give to young women an opportunity to take special graduate work in the South to fit them for the many positions ever opening in this section.

Health Conditions Improving in Austria.

Dr. Mary Griscom, Philadelphia, who has spent the last nine months in relief work for the American Friends Service Committee in Austria, has just returned to America. She had charge of the anti-tuberculosis work for the Service Committee in accordance with a program supported by that organization and the Austrian Department of Health in a fight against the menacing plague which threatened the lives of tens of thousands of their children.

With the health of her child population sapped by years of undernourishment during

the war, Austria was unable to check the invasion of tuberculosis. Very young children are infected with the disease and the government has not been able to provide treatment.

Dr. Griscom was associated with Dr. von Pirquet, the famous child specialist in Vienna. Teachers are trained in anti-tuberculosis and child care methods in Dr. von Pirquet's clinic, then are sent out into the remote districts of the provinces to give instruction in the homes and schools. Dr. Griscom reports that the Austrian Government is fast regaining her ability to cope with her gigantic health problems. The Friends Service has been able to save the lives and health of hundreds of children by making it possible for them to have medical attention and suitable food.

Dr. H. U. Stephenson,

Richmond, Va., by invitation delivered an address before the Conference Board of Physicians in Industry, at its tenth anniversary meeting at Hotel Astor, New York City, April 4 and 5.

Dr. A. D. Ownbey,

Newport News, Va., left the 4th of April for Philadelphia, to which place he went to take a post-graduate course in operative surgery and surgical anatomy at the University of Pennsylvania. He does not expect to return to Newport News until in June of this year.

Dr. H. M. Miles

Has returned to his home in Norton, Va., after doing post-graduate work in New York City in eye, ear, nose and throat work.

Dr. Karl Blackwell,

Richmond, was recently called to Lynchburg by the death of his mother, Mrs. John D. Blackwell, at Randolph-Macon Woman's College in that place.

Provisional Birth and Mortality Figures,

For the first nine months of 1923, indicate slightly lower birth rates and slightly higher death rates than for the corresponding nine months in 1922. For the states compared, North Carolina showed the highest and Montana the lowest birth rate, for this period, and Maryland the highest adjusted and Montana the lowest adjusted death rate.

Winchester Hospital Board Reorganized.

At a meeting held the middle of March, the board of directors of Winchester (Va.) Memorial Hospital was reorganized and greatly enlarged. It now includes about seventy-five business and professional men representing the city of Winchester, and the counties of Frederick, Clark, Warren, Rappahannock, and Shenandoah of Virginia, and Hardy and Hampshire of West Virginia. The newly elected officers are: President, Dr. Hunter H. McGuire; vice-president, Mr. C. W. Trenary; and secretary-treasurer, Dr. J. E. Harris. The executive committee appointed by the board to take active management of the hospital is composed of Drs. W. P. McGuire, P. W. Boyd. E. C. Stuart, B. B. Dutton, Mr. H. F. Byrd, Mr. Shirley Carter, Mr. H. B. McCormac.

While no plans have been formulated at this time, it is generally expected that a new 100-bed hospital and nurses' home will shortly be built on a new location. To accomplish this, it is likely that a campaign will be undertaken in the near future to raise two hundred thousand dollars for the purposes indicated.

The Samuel D. Gross Prize of $1,500.

Drs. William J. Taylor, John H. Jopson, and Edward B. Hodge, trustees, announce that the conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D .Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1925.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

Dr. T. S. Hening,

Jefferson, Va., has been appointed judge of the Juvenile and Domestic Relations Court of Powhatan, Va.

Dr. Francis Lee Thurman,

Recently of Glasgow, Va., announces his removal to Buena Vista, Va., where he is located for the practice of medicine.

Dr. H. D. Ribble,

After spending the winter months at Mt. Hope, W. Va., expects to return to his home at Blacksburg, Va., the first of May.

Dr. William H. Parker

Was re-elected president of the Business Men's Association of the East End, Richmond, Va., at its annual meeting held last month.

Dr. F. P. Fletcher and Dr. R. S. Faris were elected members of the Board of Directors.

On Board of New Bedford Bank.

Drs. M. P. Rucker and E. L. Johnson, both of Bedford, Va., have been elected to the board of directors of the Bedford Trust and Savings Bank, which is being organized in that city.

Dr. and Mrs. H. A. Tabb,

Of Gloucester, Va., were recent visitors in Richmond.

Dr. W. W. Chaffin,

President of the Medical Society of Virginia, returned to his home in Pulaski, the latter part of March, after a business trip to Philadelphia.

Dr. L. O. Vaughan

Has returned to his home in Waverly, Va., much improved, after being under treatment at a Richmond hospital.

Dr. James K. Hall,

Of Richmond, has been appointed by the Governor to be a member of the special board of directors of the Central State Hospital, Petersburg, from March 27, 1923, for a term of six years ending March 1, 1929.

Dr. and Mrs. H. S. Daniel,

Louisa, Va., were recent visitors in Richmond.

Dr. S. E. Hughes,

Danville, Va., who has been ill for some time, is reported slightly better at this time.

Dr. John A. Tyree,

Who has been quite sick at his home in Danville, Va., is much improved.

Dr. J. Blair Spencer,

Of Philadelphia, formerly of Williamsburg, Va., has recently been on a visit to Gloucester, Va., where he has leased "Edgeware." It is understood that he contemplates purchasing this place.

Dr. Edwin J. Nixon,

Petersburg, Va., was recently called to North Carolina on account of the illness of his brother.

Dr. and Mrs. Thomas W. Murrell,

Richmond, have returned home after a visit to St. Augustine and other places of interest in Florida.

Among Directors for Farmville Hotel.

Drs. R. L. Hudgins, J. Weldon Smith and Thos. G. Hardy, all of Farmville, Va., have been elected directors of the Farmville Hotel Corporation. The site has been selected and a new hotel will be erected there shortly.

Meetings at Atlantic City.

The American Climatological and Clinical Association will meet at The Ambassador, Atlantic City, N. J., for its annual convention May 1-2-3. One hundred and fifty doctors are expected to attend.

The American Urological Association has also completed arrangements to return to the Ambassador where it met two years ago. This association will spend two days at the shore, June 3rd and 4th.

Northampton-Accomac Memorial Hospital.

Charter has been issued by the State Corporation Commission to this hospital, now in process of construction at Nassawadox, Northampton County, Va., as a memorial to the men from the Eastern Shore of Virginia who served in the World War. The structure will cost about $85,000 and will serve a population of about 65,000 people, the hospital at Salisbury, Md., being the only other institution of its kind on the Eastern Shore. It is expected that this hospital will be completed in a few months.

The Southside Virginia Medical Association,

Of which Dr. George H. Reese, Petersburg, is president, and Dr. R. L. Raiford, Sedley, secretary, held its regular quarterly meeting in Suffolk, March 11th, with a good attendance. The program included a discussion of papers of unusual interest. Upon completion of the scientific program, the visiting doctors were entertained at a dinner given by the Suffolk faculty.

The next meeting is to be held at Victoria,

XUM

Va., on June the 10th, and Dr. Herbert C. Jones, of Petersburg, was appointed leader of the general discussion for that meeting.

Physiotherapy Aide Wanted.

The United States Civil Service Commission announces that examinations will be held throughout the country on May 7 and June 18, to secure eligibles from which to fill vacancies as physiotherapy aide and physiotherapy pupil aide in the United States Public Health Service. Full information may be secured from the above named Commission, at Washington, D. C.

Dr. Victor F. Cullen,

Medical superintendent of Maryland Tuberculosis Sanatorium, at State Sanatorium, Md., has been awarded the Knighthood of St. George, by Pope Pius XI. Dr. Cullen is a graduate of Johns Hopkins University Medical Department in the class of 1906.

Dr. George W. Skaggs,

Of the class of '08, Medical College of Virginia, announces that he has moved from Whittaker, W. Va., to Beards Fork, W. Va.

Attend American Legion Convention.

Dr. W. B. Peters, Appalachia, Va., Ninth District ex-committeeman, and Dr. Charles E. Dyer, Jewell Ridge, Va., department vice-commander of the American Legion, attended the District Convention recently held in Bristol, Va. Dr. Dyer also attended an executive meeting of the Legion in Richmond, last month.

The Medical Association of the Valley of Virginia

Will hold its regular semi-annual meeting on May 29, 1924, at Harrisonburg, Va., the first session convening at 11 A. M. Dr. J. M. Emmett, Clifton Forge, is president, and Dr. Alex. F. Robertson, Jr., Staunton, secretary.

Dr. P. G. Hamlin

Is again connected with the staff of Eastern State Hospital, Williamsburg, Va. He returned recently after having spent ten months in the laboratory of the Protestant Episcopal Hospital in Philadelphia.

Dr. John W. Shawver,

Formerly with St. Luke's Hospital, Bluefield, W. Va., is now associated with Dr. W. R. Williams, at Richlands, Va., in private practice and at the Mattie Williams Hospital in that place. Dr. Shawver graduated from the Medical College of Virginia in 1920.

The American Gynecological Society

Is to hold its forty-ninth annual meeting at Hot Springs, Va., May 15-17, 1924, under the presidency of Dr. Barton Cooke Hirst, of Philadelphia. Dr. Arthur H. Curtis, Chicago, is secretary of this Society.

Clinic Tour to Canada, British Isles and Paris in 1925.

Inter-State Post-Graduate Clinic Tour to Canada, British Isles, and Paris in 1925 is now being arranged under the supervision of the Managing-Director's office of the Tri-State District Medical Association of the middle-west states. The time for leaving will be about the middle of May of next year.

The tour will consume, approximately, two months' time and the total cost from Chicago and back to Chicago again will be less than $1,000.00. This will include all clinic arrangements and admissions and all traveling expenses, except meals on Pullmans in America and tips on the ocean steamer. First-class hotels will be used everywhere and the ocean passage will be on the largest and finest of the new one cabin ships.

Clinics are being arranged in Dublin, Belfast, Liverpool, Manchester, Leeds, Edinburgh, Glasgow, Newcastle, London and Paris and other points of clinical interest, and these will be conducted by the leading clinicians of these cities. The opportunity will be given, subsequently, to visit the clinic centers in other parts of Europe.

This tour is open to members of the profession who are in good standing in their state or provincial societies and their families and friends. Sight-seeing programs will be arranged without extra cost for practically every day abroad, including the most scenic part of the countries visited.

On account of the great demand for reservations, applications should be made as early as possible to Dr. William B. Peck, Managing-Director, Freeport, Illinois. Preference in the assignment of hotel and steamship accommodations will follow in the order in which the applications are received.

Married.

Dr. Thomas G. Pretlow and Mrs. Esther Berkeley Bentley, of Chester, Va., March 26, at Chester, Va.

Dr. William Bailey Sims, Jr., Washington, D. C., and Miss Marie Lorton, in Richmond, Va., March 22. Dr. Sims is a graduate of the

University of Virginia Medical School, in the class of 1919.

Books for Health.

The National Health Council, in co-operation with the National Association of Book Publishers, designated February as a "Health Book" month. Commenting on this fact, Surgeon General Cumming, of the Public Health Service, said that not only was the reading of such books at any time to be commended, but especially in February, as it is usually in this month that there is the greatest amount of illness and the greatest number of deaths, though March is a close second. The latest complete reports from the United States Census' report are for the year 1920, which show that nearly fifteen per cent of the total deaths for the year occur in the month of February.

Dr. and Mrs. O. T. Amory,

Of Newport News, Va., have been spending some time in Bermuda Islands.

Dr J. Hampton Hare,

Newland, Va., was a recent visitor to Richmond.

Plaut Research Fund.

Dr. Edward Plaut, president of Lehn & Fink, Inc., New York, has presented the Harriman Research Laboratory with the sum of $3,000 for the year 1924, to be known as the "Plaut Research Fund for Studies in Internal Medicine." This fund is to aid in the investigation of the effects of certain therapeutic agents, especially the endocrine glands. Dr. K. G. Falk has been placed in charge of this work by Dr. W. G| Lyle, director of the Harriman Research Laboratory.

American Medical Association.

Official call has been issued for the seventy-fifth annual session of the Association, to be held in Chicago, Ill., June 9-13, 1924, inclusive. The House of Delegates will convene on Monday, the 9th. The scientific assembly will open with the general meeting on Tuesday, the 10th, at 8:30 P. M. The various sections of the scientific assembly will meet Wednesday, June 11th, at 9 A. M. and at 2 P. M., and subsequently according to their respective programs. Dr. Ray Lyman Wilbur, of Stanford University, Calif., is president, and Dr. Olin West, Chicago, secretary.

Dr. E. L. Sutherland,

After serving as director of the Suffolk-Nansemond Health Unit for a short time, resigned March 1st, and has opened offices at 104 East Main Street, Charlottesville, Va. He will limit his work to diseases of the eye, ear, nose and throat.

Virginia Baptist Hospital.

Trustees of the Virginia Baptist Hospital, Lynchburg, Va., have authorized the issuance of $200,000 of bonds, proceeds of which will be used to construct at once the second unit of the hospital. It is expected the first unit will be ready for use about June the 1st.

Dr. J. F. Terrell,

Lieutenant in the medical corps of the United States Navy, who graduated from the Medical College of Virginia in the class of '18, is now connected with the medical department of the United States Naval Academy, at Annapolis, Md.

Dr. A. I. Dodson,

Richmond, by invitation presented a paper on surgery of the prostate gland, before the Danville (Va.) Academy of Medicine, on the 18th of March. This meeting was largely attended by the local doctors and many from the county.

Dr. Dexter W. Draper,

Formerly of Newport News, Va., after post-graduate work in Pennsylvania, has located at 127 East Orange St., Lancaster, Pa., and will limit his practice to diseases of children.

Dr. J. A. Hart,

Acting Assistant Surgeon in the United States Public Health Service, has been transferred from Hampton Roads Quarantine Station to Marine Hospital No. 1, Baltimore, Md.

Cancer Number.

The Canadian Practitioner, with an idea of educating the general practitioner as to the cancer situation and having him pass on necessary information to the layman, devoted its March issue entirely to the subject of "Cancer." It is of unusual interest. Every article, editorial and selection treats of some phase of the cancer problem.

The West Virginia State Medical Association

Is to hold its annual meeting in Wheeling, May 13, 14, and 15. Dr. Robert A. Ashworth, Moundsville, is president, and Dr. D. A. MacGregor, Wheeling, secretary.

XUM

Dr. D. S. Divers,

Who was located for a time in Martinsville, Va., is now practicing in Pulaski, Va.

Miss Mary D. Fairchild,

Who was formerly connected with the nursing staff of the Rockingham Memorial Hospital, at Harrisonburg, Va., announces that she was married last May to Lemuel S. Halterman, and is now living on their farm at Baker, W. Va.

Dr. Patton K. Pierce,

Who returned to Alabama upon completing his internship at the University of Virginia Hospital, is located at Eutaw, Ala., for the practice of his profession.

Decrease in Deaths from Puerperal Causes.

According to the January *Statistical Bulletin* issued by the Metropolitan Life Insurance Company, there was a gratifying decrease in mortality from puerperal conditions among their 15,000,000 industrial policyholders in 1923. The death rate for 1923 was 17.9 per 100,000 as compared with 19.0 in 1922, and 23.0 in 1920. With the big work now being done by obsetricians and health officers, it is believed these will be still further reduced.

Broadoaks Sahatorium,

At Morganton, N. C., a sanatorium for the treatment of nervous and mental patients, was destroyed by fire early in the morning of April the 3rd. Three patients lost their lives and another was fatally injured. Property loss is estimated at about $25,000.

The Physician's Plea

Is the name of a poem by R. Ruedemann, Jr., M. D., dedicated to The Dermatological Laboratories and The Abbott Laboratories. Doctors who wish this for framing may secure copies *free*, upon request to The Abbott Laboratories, 4753 Ravenswood Avenue, Chicago, Ill.

Practice for Sale.

A five thousand dollar practice in a Virginia town of three thousand people. Good roads, splendid schools and churches. No real estate. Office furniture if wanted. Must act at once. Address "H," care this journal. (Adv.)

Obituary

Dr. John Marvin Ratliff,

A popular physician of Southwest Virginia, died at his home in Richlands, Va., February 25th after a short illness with pneumonia. He was born in Buchanan County, Virginia, on July 23, 1895. Upon completion of his academic education at Fork Union Military Academy, he studied medicine at the Medical College of Virginia, Richmond, from which he graduated in 1917. He served in the medical corps of the army in the World War and saw active service in France. In 1920, he moved to Richlands and became a member of the staff of the Mattie Williams Hospital in that place. As a result of an automobile accident, Dr. Ratliff suffered the amputation of a leg in 1922. After recovering from the shock of this, he resumed the practice of his profession. He is survived by his wife, two young sons and a large family connection.

As an evidence of the esteem in which Dr. Ratliff was held in his community, every business house in Richlands closed its doors while his funeral was in progress.

Dr. Henry Bayly Melvin,

For many years a beloved physician of Halifax County, Va., died at his home in Halifax, March 9, after a long illness. He was born in Accomac County, Va., eighty-four years ago and studied medicine at the Medical College of Virginia, from which he graduated in 1862. He served through the Civil War as a surgeon in the Confederate Army, after which he located in Halifax County, and practiced in that section for fifty-seven years. He never married but is survived by a nephew and three nieces. The interment was made in Hollywood, Richmond.

Dr. Edward Willis Finch,

Petersburg, Va., died April 3, after an illness of six weeks. He was born in Powhatan County, Virginia, 78 years ago. As a boy he entered the Confederate service in the War Between the States. He was an alumnus of the University of Virginia and the University of Maryland, graduating in medicine from the last named school in 1868. Shortly after this he went to Montana to practice, and later practiced in some of the Southern states, moving to Petersburg a little over twenty years ago. He is survived by his wife and a large family connection.